FFN

Fragility Fracture Network

European Regional Congress 2024



Istanbul – Türkiye

10 – 12 October 2024

ABSTRACT BOOK

CONTENTS

Preface	iii
Committees	v
Program at a Glance	vii
Pre-Congress Day Program	
Nursing Educational Meeting	xi
FLS Success: Current and Future Perspectives	xv
Congress Scientific Program	xix
Abstracts	1
Free Papers	3
Posters	125

PREFACE

The FFN European Regional Congress was held in Istanbul on 10-12 October 2024 with the participation of 511 attendees from 32 countries. In this book, you can find the abstracts of the studies that were presented as free papers or posters at the congress. We would like to thank everyone who contributed to the scientific program of the congress as session chair, speaker and presenter. We would also like to thank the members of the organizing committee and scientific committee, the congress organization company, sponsors and all congress participants.

Sincerely,

Önder Aydıngöz
Congress President

Carmelinda Ruggiero
Congress President

Frede Frihagen
FFN President



FFN European Regional Congress – 2024

10 – 12 October 2024

Istanbul - Türkiye

CONGRESS ORGANIZING COMMITTEE

Önder Aydıngöz (Chair), Orthopaedic Surgeon, Türkiye
Carmelinda Ruggiero (Chair), Geriatrician, Italy

Frede Frihagen (FFN President), Orthopaedic Surgeon, , Norway
Karen Hertz (FFN President-Elect), Nurse, UK
Efthymios Iliopoulos, Orthopaedic Surgeon, Greece
Elias Panagiotopoulos, Orthopaedic Surgeon, Greece
Şansın Tüzün, Physical Therapy and Rehabilitation Specialist, Türkiye

CONGRESS SCIENTIFIC COMMITTEE

Önder Aydıngöz (Chair), Orthopaedic Surgeon, Türkiye
Carmelinda Ruggiero (Chair), Geriatrician, Italy

Artan Bano, Orthopaedic Surgeon, Albania
Filiz Can, Physiotherapist, Türkiye
Bruno Carvalho, Anaesthesiologist, Portugal
Mark Coburn, Anaesthesiologist, Germany
Matt Costa, Orthopaedic Surgeon, UK
Stefano Eleuteri, Psychologist, Italy
Mary Walsh, Physiotherapist, Ireland
Frede Frihagen, Orthopaedic Surgeon, Norway
Ólöf Geirsdóttir, Dietitian - Nutritionist, Iceland
Xavier Griffin, Orthopaedic Surgeon, UK
Karen Hertz, Nurse, UK
Efthymios Iliopoulos, Orthopaedic Surgeon, Greece
Kassim Javaid, Rheumatologist, UK
Morten Tange Kristensen, Physiotherapist, Denmark
Polyzois Makras, Endocrinologist, Greece
Maria Nuotio, Geriatrician, Finland
Cristina Ojeda-Thies, Orthopaedic Surgeon, Spain
Elias Panagiotopoulos, Orthopaedic Surgeon, Greece
Maria Panourgia, Geriatrician, UK
Anette Hylen Ranhoff, Geriatrician, Norway
Opinder Sahota, Orthogeriatrician, UK
Katie Sheehan, Physiotherapist, UK
Julie Santy Tomlinson, Nurse, UK
Şansın Tüzün, Physical Therapy and Rehabilitation Specialist, Türkiye
Nathalie Van Der Velde, Geriatrician, the Netherlands

FFN European Regional Congress – 2024

10 – 12 October 2024

Istanbul - Türkiye

Program at a glance

10 October 2024, Thursday

Registration

The registration desk will be open between **07:30** and **18:30** throughout the congress

Pre-Congress Day Program

Session 1
Hall 1
08:30 - 13:30
Nursing care for fragility fracture patients

Session 2 (Sponsored by UCB)
Hall 1
14:30 - 18:15
FLS success: Current and future perspectives

Opening Ceremony

Hall 1
18:30 - 19:30

11 October 2024, Friday

	HALL 1	HALL 2	HALL 3
08:00 - 09:00	**Symposium 1** Listening to patient voices for delivering better fragility fracture care	**Symposium 2** Supporting lower urinary tract function in perioperative hip fracture care	**Free Papers 1-9** Pillar 1: Acute care
	Coffee Break		
09:10 - 10:10	**Keynote Lectures** **KL 1** Anaesthetic management to optimize surgical outcomes **KL 2** Detection of vertebral fractures using AI **KL 3** Regionalization and national FFNs - An overview of different regions	**Symposium 3** Fragility fractures: More than hip and spine	**Free Papers 10-18** Pillar 2: Rehabilitation
	Coffee Break		
10:30 - 11:30	**Symposium 4** FFN global consensus on the holistic management of vertebral fragility fracture	**Symposium 5** Interdisciplinary working to reduce immobilisation time after hip fracture	**Free Papers 19-27** Pillar 3: Secondary prevention
	Coffee Break		
11:40 - 12:20	**Sponsored Symposium 1** *TASARIMMED MEDICAL DEVICES* Osteoporotic spine: Problems and solutions		**Free Papers 28-33** Pillar 4: Policy
	Lunch		
13:20 - 14:40	**Plenary Lectures** **PL 1** History and philosophy of FFN **PL 2** How to influence decision makers to prioritise setting up FLSs? **PL 3** Health related quality of life following hip fracture **PL 4** What a difference a nurse makes: The value of nursing in fragility fracture care		
	Coffee Break		
14:50 - 16:00	**Keynote Lectures** **KL 4** How does nursing fit in the interdisciplinary fragility fracture research effort? **KL 5** The process of audit, analysis, and informing practice change for rehabilitation **KL 6** Peripheral nerve blocks: When and why? **KL 7** Management of periprosthetic fragility fractures	**Symposium 6** Hip fracture – What happens after discharge? Risk and readmission	**Free Papers 34-44** Pillar 1: Acute care
	Coffee Break		
16:15 - 17:15	**Symposium 7** You can't improve what you do not measure	**Symposium 8** World Falls Guidelines (WFG) & fracture care	**Free Papers 45-53** Pillar 3: Secondary prevention
	Coffee Break		
17:30 - 18:30	**Keynote Lectures** **KL 8** Osteoporosis: The role of physical and rehabilitation medicine physicians - The European perspective based on the best evidence **KL 9** Latest evidence on distal radius fracture treatment **KL 10** The role of radiologist in atypical femoral fractures	**Symposium 9** Secondary prevention practitioner - Extending the team	**Free Papers 54-62** Pillar 1: Acute care

12 October 2024, Saturday

	HALL 1	HALL 2	HALL 3
08:00 - 09:00	**Symposium 10** Stopping the downward spiral between falls and fractures *(EuGMS-FFN Symposium)*	**Symposium 11** Fostering immediate postoperative weight-bearing in hip fractures	**Free Papers 63-71** Pillar 1: Acute care
	Coffee Break		
09:10 - 10:10	**Keynote Lectures** **KL 11** Patient-centred care **KL 12** Comprehensive assessment driven management: When, why and how? **KL 13** Delirium and fragility fractures	**Symposium 12** Setting up an orthogeriatric ward	**Free Papers 72-80** Pillar 2: Rehabilitation
	Coffee Break		
10:30 - 11:30	**Symposium 13** Useful pharmaceutical intervention in the acute phase	**Symposium 14** Nutritional needs among older adults from hospital stay to community	**Free Papers 81-89** Pillar 1: Acute care
	Coffee Break		
11:40 - 12:20	**Sponsored Symposium 2** *NUTRICIA* From fragility to stability: The role of medical nutrition in the multimodal management of older patients		**Free Papers 90-95** Pillar 3: Secondary prevention
	Lunch		
13:20 - 14:40	**Plenary Lectures** **PL 5** Orthogeriatrics as a value based health care model **PL 6** Cemented hemiarthroplasty for all? **PL 7** Mobile-health intervention for older adults with hip fracture and family caregivers **PL 8** Implementing nutritional care: Whose responsibility is it?		
	Coffee Break		
14:50 - 16:00	**Keynote Lectures** **KL 14** Treatment of vertebral fragility fractures **KL 15** Fracture-related infections **KL 16** Assessment of Individual fracture risk: FRAX and beyond **KL 17** The effect of physical activity and exercises on sarcopenia	**Symposium 15** Unsolved interdisciplinary rehabilitation needs 120 days after hip fracture – Recovery, falls and fracture prevention	**Free Papers 96-106** Pillar 1: Acute care
	Coffee Break		
16:15 - 17:15	**Symposium 16** Fracture Liaison Service (FLS) competencies	**Symposium 17** Concerns about falls - Why it's important, who is at risk, and how may we overcome this?	**Free Papers 107-115** Miscellaneous
	Coffee Break		
17:30 - 18:30	**Keynote Lectures** **KL 18** Top tips for prevention of the denosumab off effect **KL 19** Educational needs of health care professionals: How to intervene? **KL 20** Stepping forward: Advances in ankle fracture management and rehabilitation	**Symposium 18** Neurocognitive problems in orthogeriatric patients	**Free Papers 116-124** Pillar 3: Secondary prevention
18:35 - 19:00	**Award Ceremony and Closing**		

FFN European Regional Congress

Pre-congress Day - Nursing Educational Meeting

Thursday, 10 October 2024

Radisson Blu Hotel Sisli, Istanbul

08:30 - 13:30

NURSING CARE FOR FRAGILITY FRACTURE PATIENTS

Scientific Committee

Karen Hertz
Nurhan Bayraktar, Çiğdem Canbolat Seyman, Julie Santy-Tomlinson, Hayriye Ünlü

This is a free educational event provided by the Fragility Fracture Network (FFN) for nurses working with patients with fragility fractures from any country. Places are limited so attendees must register in advance to ensure a place at the meeting. The meeting will be conducted in English.

PROGRAMME

08:00 – 08:30
Arrival, registration, and networking

08:30 – 08:45
Opening remarks: "Nursing within FFN" Karen Hertz (President Elect FFN, Advanced Nurse Practitioner, UK)

08:45 – 09:45

Session 1

Moderators

Karen Hertz (President Elect FFN, Advanced Nurse Practitioner, UK)
Hayriye Ünlü (President, Turkish Society of Orthopaedic Nurses, Nurse, Türkiye)

The education needs of healthcare professionals related to fragility fracture and orthogeriatric care
Julie Santy-Tomlinson (FFN Global/UK FFN Education Committee Member, Nurse, UK)
10 min

The nursing role in orthogeriatric assessment
Çiğdem Kaya (Nurse, Türkiye)
10 min

Nuritional needs of fragility fracture patients
Ólöf Geirsdóttir (Dietitian - Nutritionist, Iceland)
Jack Bell (Dietician, Australia)
10 min

Fragility and frailty, what is the significance?
Julie Santy-Tomlinson (FFN Global/UK FFN Education Committee Member, Nurse, UK)
10 min

Panel questions, answers and discussion
15 min + 5 min comfort break

09:45 – 10:45

Session 2

Moderators

Nurhan Bayraktar (Nurse, Türkiye)
Julie Santy-Tomlinson (FFN Global/UK FFN Education Committee Member, Nurse, UK)

Incontinence and pressure injuries
Sevilay Şenol Çelik (Nurse, Türkiye)
10 min

Delirium in patients with fragility fracture
Çiğdem Canbolat Seyman (Nurse, Türkiye)
10 min

Postoperative pain management in fragility fracture patients
Özlem Bilik (Nurse, Türkiye)
10 min

How is the patient mobilized after a fragility fracture?
Ayse Gül Atay Doyğacı (Nurse, Türkiye)
10 min

Panel questions, answers and discussion
20 min

10:45 – 11:15

Coffee break and networking

11:15 – 12:15

Session 3

Moderators

Çiğdem Canbolat Seyman (Nurse, Türkiye)
Carmen Queiros (Rehabilitation Specialist Nurse, Portugal)

Orthogeriatric patient care
Denisa Velic (Vice President, FFN Norway, Nurse, Norway)
10 min

Acute care of fragility fracture patients
Hayriye Ünlü (President, Turkish Society of Orthopaedic Nurses, Nurse, Türkiye)
10 min

Postoperative care of fragility fracture patients
Nurhan Bayraktar (Nurse, Türkiye)
20 min

Panel questions, answers and discussion
15 min + 5 min comfort break

12:15 – 13:15

Session 4

Moderators

Özlem Bilik (Nurse, Türkiye)
Denisa Velic (Vice President, FFN Norway, Nurse, Norway)

The roles of nurses in the rehabilitation of fragility fracture
Carmen Queiros (Rehabilitation Specialist Nurse, Portugal)
10 min

The FFN SIMPLE nutrition project
Ólöf Geirsdóttir (Dietitian - Nutritionist, Iceland)
Jack Bell (Dietician, Australia)
15 min

How you can be a fragility fracture/orthogeriatric care 'champion' and what you can take away
Karen Hertz (President Elect FFN, Advanced Nurse Practitioner, UK)
Julie Santy-Tomlinson (FFN Global/UK FFN Education Committee Member, Nurse, UK)
20 min

Panel questions, answers and discussion
15 min

13:15 – 13:30

Closing remarks and next steps
Hayriye Ünlü (President, Turkish Society of Orthopaedic Nurses, Nurse, Türkiye)
Nurhan Bayraktar (Nurse, Türkiye)
Çiğdem Canbolat Seyman (Nurse, Türkiye)

FFN European Regional Congress

Pre-congress Day

Thursday, 10 October 2024

Radisson Blu Hotel Sisli, Istanbul

14:30 - 18:15

FLS SUCCESS: CURRENT AND FUTURE PERSPECTIVES

This is a free educational event presented by:



PROGRAM

14:30 – 14:40
Welcome and introduction Andrew Gray (Orthopaedic Surgeon, UK) Kassim Javaid (Rheumatologist, UK)

14:40 – 16:30

Session 1

Moderators

Andrew Gray (Orthopaedic Surgeon, UK)
Kassim Javaid (Rheumatologist, UK)

Unmet needs session
Kassim Javaid (Rheumatologist, UK)
15 min

FAN: Helping you pave the way to FLS success
Andrew Gray (Orthopaedic Surgeon, UK)
15 min

European FLS insights: Lessons from local implementation
European FLS representatives
Daniela Schweppenhäuser (Orthopaedic Surgeon, Germany)
Inder Singh (Geriatrician, UK)
Bernie Conlon (Nurse, Ireland)
Elias Panagiotopoulos (Orthopaedic surgeon, Greece)
60 min

Panel discussion and Q&A
20 min

16:30 – 17:00

Coffee break and networking

17:00 – 18:05

Session 2

Moderators

Andrew Gray (Orthopaedic Surgeon, UK)
Kassim Javaid (Rheumatologist, UK)

The future of FLS: An MDT perspective
Andréa Marques (Nurse, Portugal)
Frede Frihagen (Orthopaedic Surgeon, Norway)
Kassim Javaid (Rheumatologist, UK)
45 min

Panel discussion and Q&A
20 min

18:05 – 18:15

Summary and close
Andrew Gray (Orthopaedic Surgeon, UK)
Kassim Javaid (Rheumatologist, UK)



FFN European Regional Congress – 2024

10 – 12 October 2024

Istanbul - Türkiye

Scientific Program

11 October 2024, Friday

08:00 – 09:00

HALL 1

Symposium 1

LISTENING TO PATIENT VOICES FOR DELIVERING BETTER FRAGILITY FRACTURE CARE

Moderators

Jack Bell (Clinical and research dietitian, Australia)
Karen Hertz (Nurse, UK)

The value of listening to patient voices

Charlotte Myhre Jensen (Nurse, Denmark)
9 min

Capturing and listening to patient experience

Antony Johansen (Orthogeriatrician, UK)
9 min

The patient voice in nutritional optimisation

Ólöf Geirsdóttir (Dietitian - Nutritionist, Iceland)
9 min

The perspectives of older adults and their family caregivers in designing future rehabilitation

Patrocinio Ariza Vega (Occupational therapist, Spain)
9 min

The voices of patients' families

Cristina Ojeda-Thies (Orthopaedic surgeon, Spain)
9 min

Discussion

15 min

HALL 2

Symposium 2

SUPPORTING LOWER URINARY TRACT FUNCTION IN PERIOPERATIVE HIP FRACTURE CARE

Moderators

Çiğdem Canbolat Seyman (Nurse, Türkiye)
Maria S. Nuotio (Geriatrician, Finland)

Urinary dysfunction in older hospitalized patients with acute fragility hip fracture

Maria Panourgia (Geriatrician, UK)
10 min

Prompt removal of urinary catheter: A single intervention to improve recovery?

Maria S. Nuotio (Geriatrician, Finland)
10 min

A nurse-led protocol to prevent and manage perioperative urinary retention

Maria Frödin (Nurse, Sweden)
10 min

Promotion of high quality continence care

Kolbrun Kristiansen (Nurse, Iceland)
10 min

Discussion

20 min

HALL 3

Free Papers 1

PILLAR 1:
ACUTE CARE

Moderator

Carmen Queiros (Nurse, Portugal)

FP-1 **THE PILOT IMPLEMENTATION OF THE GREEK NATIONAL FRAGILITY HIP FRACTURE REGISTRY BASED ON THE MINIMUM COMMON DATA SET**
Efthymios Iliopoulos, Theodoros Tosounidis, Reichan Molla Mustafa, Fotios Tilkidis, Ioannis Daskalakis, Dimitra Melissaridou, Dimitrios Serenidis, Vasileios Giannatos, Maria Sentona, Dimitrios Grammatikopoulos, Ioannis Gkiatas, Irini Tatani, Christianna Zidrou, Olga Savvidou, Michael Potoupnis, Georgios Drosos

FP-2 **ARE THE NEW GENERATION PROXIMAL FEMORAL NAILS TRULY SUPERIOR IN THE TREATMENT OF INTERTROCHANTERIC FEMUR FRACTURES?**
Goker Utku Deger, Ersin Taskın, Salih Candost Yetismis, Mahmut Kursat Özsahin, Huseyin Botanlıoglu, Ali Seker

FP-3 **SHOULD WE ASK PATIENTS TO MAKE DO NOT ATTEMPT CARDIO-PULMONARY RESUSCITATION DECISIONS BEFORE HIP FRACTURE SURGERY?**
Ioan Llwyd Hughes, Amelia Collings, Kang Tan, Antony Johansen

FP-4 **PLASMA CALPROTECTIN COMPARED TO CONVENTIONAL INFECTION BIOMARKERS IN HIP FRACTURE PATIENTS – A PROSPECTIVE COHORT STUDY**
Helmi-Sisko Pyrhönen, Alicia Persson, Johan Tham, Anna Stefansdottir, Linnea Malmgren, Cecilia Rogmark

FP-5 **THE NEW MOBILITY SCORE HAS STRONGER PREDICTIVE VALUE TO THE ONE YEAR MORTALITY OF FRAGILITY HIP FRACTURE**
Reichan Molla Moustafa, Efthymios Iliopoulos, Ioannis Kougioumtzis, Stylianos Tottas, Athanasios Ververidis, Konstantinos Tilkeridis, Georgios Drosos

FP-6 **USE OF EXTERNAL FIXATORS IN GERIATRIC FRACTURES: HOW SHOULD PIN REMOVAL BE FOLLOWING UNION?**
Bedrettin Akar, Fatih Uğur

FP-7 **IDENTIFYING RISK FACTORS FOR DELIRIUM IN PATIENTS WITH HIP FRACTURE AS PREDICTOR OF WORSE OUTCOME**
Elena Bianchi, Sara Rogani, Giulia Pescatore, Alessia Maria Calabrese, Filippo Niccolai, Ludovica Di Carlo, Francesca Carmassi, Elena Carlino, Valeria Calsolaro, Michelangelo Scaglione, Fabio Monzani, Agostino Virdis

FP-8 **MULTICENTER IMPLEMENTATION OF ORTHOGERIATRICS-FLS: AN EVIDENCE-BASED FRAMEWORK FOR DIGITAL HEALTH REGISTRY**
Irewin A. Tabu, Bernardino B. Alpuerto II, Karla Teresa S. Araneta, Giorgio D. Delgado, Julius Bryan C. Abesamis

FP-9 **POSTOPERATIVE INTENSIVE CARE UNIT PREPARATION FOR GERIATRIC HIP FRACTURE PATIENTS: IS IT A MUST?**
Batuhan Gencer, İhsan Özdamar, Serdar Satılmış Orhan, Aqshin Cabbarlı, Deniz Gülabi

11 October 2024, Friday

09:10 – 10:10

HALL 1

Keynote Lectures

Moderator

Deniz Palamar Kadıoğlu (PRM specialist, Türkiye)

KL 1

Anaesthetic management to optimize surgical outcomes

Ana Carolina Martins (Anaesthesiologist, Portugal)
15 min

KL 2

Detection of vertebral fractures using AI

Opinder Sahota (Orthogeriatrician, UK)
15 min

KL 3

Regionalization and national FFNs - An overview of different regions

Irewin Tabu (Orthopaedic Surgeon, Philippines)
15 min

Discussion

15 min

HALL 2

Symposium 3

FRAGILITY FRACTURES: MORE THAN HIP AND SPINE

Moderators

Mehmet Demirhan (Orthopaedic surgeon, Türkiye)
Frede Frihagen (Orthopaedic surgeon, Norway)

Proximal humerus fractures

Mehmet Demirhan (Orthopaedic surgeon, Türkiye)
10 min

Distal radius fractures

Efthymios Iliopoulos (Orthopaedic surgeon, Greece)
10 min

Atypical femoral fractures

Panagiotis Konstantinou (Orthopaedic surgeon, Greece)
10 min

Ankle fractures

Frede Frihagen (Orthopaedic surgeon, Norway)
10 min

Postfracture rehabilitation

David Keene (Physiotherapist, UK)

10 min

Discussion

10 min

HALL 3

Free Papers 2

PILLAR 2: REHABILITATION

Moderators

Gizem İrem Kınıklı (Physiotherapist, Türkiye)
Katie Sheehan (Physiotherapist, UK)

FP-10 **TIME TO MOBILIZATION IN HOURS AFTER SURGERY FOR HIP FRACTURE AND 30-DAY MORTALITY – A 6-YEAR NATIONWIDE REGISTER STUDY**
Morten Tange Kristensen, Ina Trolle Andersen, Bjarke Viberg, Alma Becic Pedersen

FP-11 **EARLY OCCUPATIONAL THERAPY AND INTEGRATED PHYSIOTHERAPY APPROACHES IMPROVE OUTCOMES AFTER HIP FRACTURE SURGERY**
Melissa Taylor

FP-12 **ASSOCIATION BETWEEN EARLY MOBILIZATION AFTER HIP FRACTURE SURGERY AND RISK OF CHRONIC OPIOID USE WITHIN 1 YEAR**
Yasmina Maria Tudorache, Ina Trolle Andersen, Morten Tange Kristensen, Alma Becic Pedersen

FP-13 **PATIENT EDUCATION POST VERTEBRAL FRAGILITY FRACTURE: A SCOPING REVIEW**
Caitriona Gabrielle Cunningham, Jane Duffy, Ellie May Heatley, Katie Hogan, Fiona Kilkenny, Padhraic Linehan, Diarmuid Stokes, Karen Barker

FP-14 **EVALUATING INTRA-RATER RELIABILITY AND VALIDITY OF TELE-ASSESSMENT FOR PERFORMANCE BASED FUNCTIONAL TESTS IN ELDERLY**
Sezen Karaborklu Argut, Yıldız Analay Akbaba, Derya Celik

FP-15 **ENHANCING REHABILITATION PATHWAYS FOR ORTHOPEDIC PATIENTS: A COLLABORATIVE APPROACH**
Máire Gilmartin, Ruth Daly, Schira Farrell, Clodagh O'Dwyer, Sinead Reynolds, Conor Hurson, Rachael Doyle, Suzanne Noel, Niamh Vanderbergh

FP-16 **PATIENT AND PUBLIC INVOLVEMENT DURING RESEARCH ABOUT HIP FRACTURE: CHALLENGES AND OPPORTUNITIES**
Emma L. Sutton, Hannah E. Reilly, Tarunya Vedutla, Teresa Melody, Caroline Miller, Srihari Tippa, Ranaganayaki S. Gudivada, Anne E. Topping

FP-17 **PATIENT PERSPECTIVES ON INTENSIFIED ACUTE HOSPITAL PHYSIOTHERAPY AFTER HIP FRACTURE SURGERY - A QUALITATIVE STUDY**
Theresa Bieler, Camilla Kampp Zilmer, Inger Birgitte Bährentz, Signe Østergaard Zoffmann, Søren Overgaard, Morten Tange Kristensen, Therese Emborg

FP-18 **INVESTIGATING THE QUALITY OF LIFE AND MORTALITY AMONG PATIENTS WITH PERTROCHANTERIC HIP FRACTURES IN NORTHERN GREECE**
Panagiotis Konstantinou, Lazaros Kostretzis, Georgios Fragkiadakis, Anastasios P. Nikolaides, Ioannis Gigis, Pericles Papadopoulos, Konstantinos Ditsios

11 October 2024, Friday

10:30 – 11:30

HALL 1

Symposium 4

FFN GLOBAL CONSENSUS ON THE HOLISTIC MANAGEMENT OF VERTEBRAL FRAGILITY FRACTURE (VFF)

Moderators

Frede Frihagen (Orthopaedic surgeon, Norway)
Opinder Sahota (Orthogeriatrician, UK)

Overview of FFN Global Consensus on the Holistic Management of VFF

Opinder Sahota (Orthogeriatrician, UK)
10 min

Global survey results of the FFN Global Consensus on the Holistic Management of VFF

Caitriona G. Cunningham (Physiotherapist, Ireland)
15 min

FFN Global Consensus on the Holistic Management of VFF rehabilitation and key performance indicators

Opinder Sahota (Orthogeriatrician, UK)
15 min

Discussion

20 min

HALL 2

Symposium 5

INTERDISCIPLINARY WORKING TO REDUCE IMMOBILISATION TIME AFTER HIP FRACTURE

Moderators

Morten Tange Kristensen (Physiotherapist, Denmark)
Katie Sheehan (Physiotherapist, UK)

What is meant by 'early'? What timeframe (in hours) should we focus our energy on, and how?

Morten Tange Kristensen (Physiotherapist, Denmark)
8 min

Why are patients delayed – Medically justified or system derived? Who benefits most from early access?

Cristina Ojeda-Thies (Orthopaedic surgeon, Spain)
8 min

Reducing immobilisation time – Coping with the frailty of the patient

Antony Johansen (Orthogeriatrician, UK)
8 min

Interdisciplinary working to reduce immobilisation time

Charlotte Myhre Jensen (Nurse, Denmark)
8 min

Implementation of educational interventions to improve MDT engagement in achieving early mobilisation

Rene Gray (Physiotherapist, UK)
8 min

Enabling healthcare assistants to support early mobilisation after hip fracture surgery

Melissa Taylor (Occupational therapist, UK)
8 min

Discussion

12 min

HALL 3

Free Papers 3

PILLAR 3: SECONDARY PREVENTION

Moderators

Maria S. Nuotio (Geriatrician, Finland)
Rana Terlemez (PRM Specialist, Türkiye)

FP-19 **SOCIOECONOMIC POSITION AND CHRONIC OPIOID USE AFTER HIP FRACTURE SURGERY: A DANISH POPULATION-BASED COHORT STUDY**
Nickolaj Risbo, Vera Ehrenstein, Per Hviid Gundtoft, Jan-Erik Gjertsen, Alma Becic Pedersen

FP-20 **WHAT COGNITIVE AND PHYSICAL FACTORS PREDICT FALL RISK IN PATIENTS WITH DEMENTIA?**
Ilkem Guzel, Filiz Can

FP-21 **THE IMPACT OF SURGERY TIMING ON DELIRIUM IN ELDERLY PATIENTS WITH FRAGILITY FRACTURES: A RETROSPECTIVE ANALYSIS**
Cumhur Deniz Davulcu, Derya Akbaba

FP-22 **INITIATION OF ANTI-OSTEOPOROSIS TREATMENT IN OLDER HIP FRACTURE PATIENTS IS MORE SUCCESSFUL WITH ORTHOGERIATRIC MODEL**
Matias Pehkonen, Helmi Rauhaniemi, Maria S. Nuotio

FP-23 **ASSESSING IMPACT OF THE 5 NATIONS CONSENSUS PAPER ON IV ZOLEDRONATE ADMINISTRATION POST-HIP FRACTURE IN OLDER PATIENTS**
Jasen Soopramanien, Anisha Wakefield, Lindsey Marshall, Jessica Nightingale, Opinder Sahota

FP-24 **CORRELATION OF INFLAMMATORY BIOMARKERS IN GERIATRIC PATIENTS WITH SARCOPENIA -A CASE CONTROL STUDY**
Anup Singh, Ahalya K

FP-25 **THE RELATIONSHIP BETWEEN TESTOSTERONE LEVELS, HIP FRACTURES, AND OSTEOPOROSIS IN MALE PATIENTS**
Raffi Armağan, İsmail Eyüp Dilek, Yusuf Altuntaş, İsmail Tüter, Ahmet Hamdi Olçar

FP-26 **LOCAL OSTEO ENHANCEMENT PROCEDURE: A METHOD TO INCREASE LOCAL BONE DENSITY TO POTENTIALLY PREVENT FURTHER FRACTURES**
Christian Bernhard Frank, Adrian Stuetzle, Sheip Panev

FP-27 **THE RELATIONSHIP BETWEEN MUSCLE STIFFNESS, PAIN, KNEE FUNCTION AND FUNCTIONAL PERFORMANCE IN EARLY-STAGE OA**
Aysenur Goksen, Filiz Can

11 October 2024, Friday

11:40 – 12:20

HALL 1

Sponsored Symposium 1

TASARIMMED MEDICAL DEVICES
OSTEOPOROTIC SPINE:
PROBLEMS AND SOLUTIONS

Moderator

Mehmet Tezer (Orthopaedic surgeon, Turkey)

Introduction

Mehmet Tezer (Orthopaedic surgeon, Turkey)
4 min

Preoperative evaluation of spinopelvic problems in osteoporotic patients

Mehmet Nuri Erdem (Orthopaedic surgeon, Turkey)

12 min

Implant selection and fixation techniques in osteoporotic spine

Mehmet Tezer (Orthopaedic surgeon, Turkey)
12 min

Augmentation techniques and minimally invasive methods in osteoporotic spine

Çağatay Öztürk (Orthopaedic surgeon, Turkey)
12 min

HALL 2

HALL 3

Free Papers 4

PILLAR 4:
POLICY

Moderators

David Marsh (Orthopaedic surgeon, UK)
Rhona McGlasson (Physioherapist, Canada)

FP-28 **AUTOMATED ELECTRONIC MEDICAL RECORD REUTILIZATION APPLIED TO THE SPANISH NATIONAL HIP FRACTURE REGISTRY**
Cristina Ojeda-Thies, Paula Rubio-Mayo, Maria Jesús Jiménez-Cerezo, Miguel Pedrera-Jiménez, Noelia García-Barrio, Juan Luis Cruz-Bermúdez

FP-29 **CHALLENGING INEQUALITIES IN PATIENT INFORMATION: MULTILINGUAL ONLINE RESOURCE FOR THOSE AFFECTED BY HIP FRACTURE**
Arouba Imtiaz, Mark Ramsden, Dafydd Brooks, Antony Johansen

FP-30 **ARE DISCHARGE COORDINATORS AN ANSWER FOR REDUCING LENGTH OF STAY IN OLDER PATIENTS WITH FEMORAL FRAGILITY FRACTURES?**
Ivan Aganin, Claire Eastick, Nicola Brown

FP-31 **HEALTH LITERACY AND ASSOCIATED FACTORS IN ELDERLY PEOPLE WITH MUSCULOSKELETAL PROBLEMS, INCLUDING FRAGILITY FRACTURES**
Katerina Athanasopoulou, Konstantinos Stolakis, Panagiota Vathi-Sarava, Petros Galanis, Georgios Nikolaou, Elias Panagiotopoulos, Manolis Mentis

FP-32 **HEALTH SEEKING-BEHAVIORS IN HOSPITALIZATION AMONG FILIPINO WITH FRAGILITY FRACTURES OF THE HIP: A MIXED METHOD STUDY**
Julius Bryan Cristobal Abesamis, Erwin Gerard Purungganan Geron, Mary Ruth Padua Rodolfo, Irewin Alagar Tabu

FP-33 **EVALUATION OF NURSING STUDENTS' AWARENESS AND ATTITUDES ABOUT FRAGILITY**
Fazilet Tamer, Nurhan Bayraktar

11 October 2024, Friday

13:20 – 14:40

HALL 1	HALL 2	HALL 3

Plenary Lectures

Moderators

Önder Aydıngöz (Orthopaedic surgeon, Türkiye)
Carmelinda Ruggiero (Geriatrician, Italy)

PL 1

History and philosophy of FFN

David Marsh (Orthopaedic surgeon, UK)
20 min

PL 2

How to influence decision makers to prioritise setting up FLSs?

Kassim Javaid (Rheumatologist, UK)
20 min

PL 3

Health related quality of life following hip fracture

Matthew Costa (Orthopaedic surgeon, UK)
20 min

PL 4

What a difference a nurse makes:
The value of nursing in fragility fracture care

Karen Hertz (Nurse, UK)
20 min

11 October 2024, Friday

14:50 – 16:00

HALL 1

Keynote Lectures

Moderators

Polyzois Makras (Endocrinologist, Greece)
Aydan Oral (PRM specialist, Türkiye)

KL 4

How does nursing fit in the interdisciplinary fragility fracture research effort?

Julie Santy-Tomlinson (Nurse, UK)
15 min

KL 5

The process of audit, analysis, and informing practice change for rehabilitation

Katie Sheehan (Physiotherapist, UK)
15 min

KL 6

Peripheral nerve blocks: When and why?

Bruno Carvalho (Anaesthesiologist, Portugal)
15 min

KL 7

Management of periprosthetic fragility fractures

Frede Frihagen (Orthopaedic surgeon, Norway)
15 min

Discussion

10 min

HALL 2

Symposium 6

HIP FRACTURE – WHAT HAPPENS AFTER DISCHARGE? RISK AND READMISSION

Moderators

Morten Tange Kristensen (Physiotherapist, Denmark)
Emma Sutton (Physiotherapist, UK)

The ARTHUR study - Big data – The PIONEER data set (5 years – primary admisisons and 30-day readmisisons after hip fracture in the Midlands, UK)

Emma Sutton (Physiotherapist, UK)
Usama Rahman (Orthopaedic Surgeon, UK)
6 min

The ARTHUR study - Readmission avoidance after hip fracture in areas of high social/economic deprivation – Recruitment, qualitative results and PPI

Hannah Reilly (Occupational Therapist, UK)
Tarunya Vedutla (Orthogeriatrician, UK)
6 min

Monitoring recovery and readmission avoidance in the Capital Region, Denmark, including data on the impact of existing services such as outpatient nurse-led follow up in the community

Morten Tange Kristensen (Physiotherapist, Denmark)
Charlotte Densing Petersen (Nurse, Denmark)
10 min

Four discharge models and the impact of each on readmission, physical function and quality of life with 1 year follow up

Eirik Salvesen (Orthopaedic Surgeon, Norway)
10 min

Group Discussion

38 min

The audience discussed the following and posted answers on a live digital platform:

What happens after patients are discharged in your place/setting? *What does good look like? What is (or is not) feasible?*

What risks do patients face when they are discharged in your place/setting? *What could be done to manage these risks?*

This pool of data will be used to create an output from this symposium which will take the form of a blog, an FFN report or perhaps a publication.

All names and affiliations will be removed and none of the responders will be able to be identified in this output.

HALL 3

Free Papers 5

PILLAR 1:
ACUTE CARE

Moderators

Anette Hylen-Ranhoff (Geriatrician, Norway)
Ufuk Özkaya (Orthopaedic surgeon, Türkiye)

FP-34 **EVALUATION OF PATIENTS' POSTOPERATIVE RESULTS FOR HIP FRACTURE WITH COMPUTERIZED DYNAMIC POSTUROGRAPHY: PFN VS. HA**
Ersin Taşkın, Mahmut Kürşat Özşahin, Muhammed Yusuf Afacan, Melda Acar, Eyyüp Kara, Ali Şeker

FP-35 **COST ANALYSIS OF ARTHROPLASTY TREATMENTS FOR FRAGILITY FRACTURES OF THE FEMORAL NECK: HEMI VERSUS TOTAL HIP ARTHROPLASTY**
Serdar Kuzu, Mete Özer, Muhammed Yusuf Afacan, Yahya Deniz, Onur Yıldırım, Ali Şeker, Mehmet Fatih Güven, Gökhan Kaynak, Mehmet Can Ünlü, Önder Aydıngöz, Hüseyin Botanlıoğlu

FP-36 **BETTER FUNCTIONAL OUTCOME FOR PATIENTS OPERATED WITH SPAIRE APPROACH WHEN SUFFERING FROM A FEMORAL NECK FRACTURE**
Maren Paus, Mads Sundet, Ulf Sundin, Sylvia Sunde, Mette Marthinsen, Siri Lillegraven, Haldor Valland, Karin Hesseberg

FP-37 **NON-REMOVAL OF INDWELLING URINARY CATHETER IS ASSOCIATED WITH IN-HOSPITAL DELIRIUM IN OLDER HIP FRACTURE PATIENTS**
Maria Susanna Nuotio, Matias Pehkonen, Markus Tapani Hongisto

FP-38 **DECISION-MAKING ON FRAGILITY FRACTURES OF THE PELVIC RING (FFP) REGARDING ROD AND SCREW PLACEMENT**
Sheip Panev, Adrian Stützle, Christian Frank

FP-39 *This free paper was not presented*

FP-40 **IS DIRECT ANTERIOR APROACH THE BEST OPTION FOR FEMORAL NECK FRACTURE PATIENTS WITH SCHIZOPHRENIA?**
Mehmet Suleyman Abul, Omer Faruk Sevim

FP-41 **RETROSPECTIVE EVALUATION OF 1-YEAR MORTALITY IN PATIENTS OPERATED ON FOR HIP FRACTURE**
Samet Bayram, Ali Geçer, Murat Kamiloğlu, Yağız Karpuz

FP-42 **INTRAMEDULLARY NAILS FOR A1/2 HIP FRACTURES IN A HIGH VOLUME CENTRE YIELDS LOW MORTALITY AND LOW REOPERATION RATES**
Fransiska Guerreiro, Ping Hei Cheng, Ahmed Farghaly, David Higgs, Simon Tilley

FP-43 **EARLY PREDICTORS OF MORTALITY IN ELDERLY PATIENTS WITH HIP FRACTURE: LEUKOCYTE TO ALBUMIN RATIO AND SERNBO SCORE**
Samet Bayram, Ahmed Uluç Yüksel, Murat Kamiloğlu, Ali Geçer

FP-44 **TURKISH VALIDITY AND RELIABILITY OF THE SUNFRAIL SCALE**
Çiğdem Canbolat Seyman, Çiğdem Kaya

11 October 2024, Friday

16:15 – 17:15

HALL 1

Symposium 7

YOU CAN'T IMPROVE WHAT YOU DO NOT MEASURE

Moderators

Antony Johansen (Orthogeriatrician, UK)
Henrik Palm (Orthopaedic surgeon, Denmark)

What is the patient's goal?

Antony Johansen (Orthogeriatrician, UK)

5 min

What are the main drivers for quality improvement?

Cristina Ojeda-Thies (Orthopaedic surgeon, Spain)
5 min

How do we capture the patients' perspective on hip fracture care?

Matthew Costa (Orthopaedic surgeon, UK)
5 min

How can we add extra detail to a registry's core dataset?

Alma Pedersen (Epidemiologist, Denmark)
5 min

Update on the FFN Registries OHDSI studyathon - Results!

Usama Rahman (Orthopaedic Surgeon, UK)
5 min

Discussion

35 min

HALL 2

Symposium 8

WORLD FALLS GUIDELINES (WFG) & FRACTURE CARE

Moderators

Filiz Can (Physiotherapist, Türkiye)
Nathalie van der Velde (Geriatrician, the Netherlands)

Multidisciplinary fracture care: Integrating the recommendations of the WFG

Alasdair MacLullich (Geriatrician, UK)
8 min

Exercise to prevent fractures (and falls); Integrating the recommendations of the WFG

Bård Erik Bogen (Physiotherapist, Norway)
8 min

Medication optimisation: Drug-related fall and fracture risk: WFG and more

Nathalie van der Velde (Geriatrician, the Netherlands)
8 min

Technology to prevent falls and fractures: Mobilize-M and WFG

Sara Groos (Communication Scientist, the Netherlands)
8 min

Implementing the WFG in Italy: GTU and beyond

Carmelinda Ruggiero (Geriatrician, Italy)
8 min

Discussion

20 min

HALL 3

Free Papers 6

PILLAR 3: SECONDARY PREVENTION

Moderators

Ülkü Akarırmak (PRM specialist, Türkiye)
Hanna Willems (Geriatrician, the Netherlands)

FP-45 **OPPORTUNITIES AND CHALLENGES FROM AI-ENABLED VERTEBRAL FRACTURE IDENTIFICATION FOR FLSS: THE ADOPT STUDY**
Muhammad Kassim Javaid , D. Chappell, V. Sanders, M. Vindlacheruvu, J. Boylan, J. Turton, M. Sampson, A. Guy, R. Eckert, E. Curtis, M. Stone, F. Cooper, Y. Kimmel, K. Poole, O. Sahota, J. Conner, J. Threlkeld, C. Chisholm

FP-46 **IMMINENT HIP FRACTURES IN FLS PATIENTS – LINKAGE OF THE NATIONAL FLS AND HIP FRACTURE DATABASES OF ENGLAND AND WALES**
Muhammad Kassim Javaid , Roshi Shrestha, Zaineb Mohsin, Antony Johansen, Celia Gregson, Rosie Dickinson, Rafael Pinedo-Villanueva

FP-47 **RECURRENT FALLS IN A 96-YEAR-OLD: A SAGA OF INAPPROPRIATE MEDICATION FROM NORTH INDIA**
Gaurav Sharma, Anup Singh, Sankha Shubhra Chakrabarti, Upinder Kaur, Sumit Jaiswal

FP-48 **FALL PREVALENCE AMONG ELDERLY PEOPLE IN NORTHERN CYPRUS AND ASSOCIATION BETWEEN INTRINSIC RISK FACTORS AND FALLS**
Hatice Hacıküçük, Emine Handan Tüzün, Levent Eker

FP-49 **FRAILTY ACCORDING TO THE SWHI TOOL PREDICTS FALLS AND HIP FRACTURE OCCURRENCE IN THE SHARE DATABASE**
Paolo Mazzola, Martina Manna, Giulia Caggiu, Matteo Monzio Compagnoni

FP-50 **FRAGILITY FRACTURE SERVICES MAY REDUCE THE INCIDENCE OF MAJOR TRAUMA DUE TO LOW-ENERGY INJURY IN OLDER PEOPLE**
Fransiska Guerreiro, Mark Baxter, Simon Tilley

FP-51 **EFFECT OF TRAINING ON FRAILITY LEVEL, CARE DEPENDENCE AND FEAR OF MOVEMENT IN HIP SURGERY PATIENTS: RCT**
Halise Çinar, Nurdan Gezer

FP-52 **THE PREVALENCE OF RE-HOSPITALIZATION AND MORTALITY AFTER FRAGILITY HIP FRACTURE: A RETROSPECTIVE STUDY**
Ayşe Gül Atay Doygacı, Ciğdem Kaya, Ciğdem Canbolat Seyman, Bahtiyar Haberal

FP-53 **HIP AIRBAGS: FRIEND OR FOE? REPORT OF A WEARABLE HIP AIRBAG CONTRIBUTING TO A SERIOUS ADVERSE EVENT IN AN OLDER ADULT**
Emma Skelly, Rob Argent, David Williams, Opinder Sahota, Frances Dockery

11 October 2024, Friday

17:30 – 18:30

HALL 1

Keynote Lectures

Moderators

Elias Panagiotopoulos (Orthopaedic surgeon, Greece)
Maria Panourgia (Geriatrician, UK)

KL 8

Osteoporosis: The role of physical and rehabilitation medicine physicians - The European perspective based on the best evidence

Aydan Oral (PRM specialist, Türkiye)
15 min

KL 9

Latest evidence on distal radius fracture treatment

Matthew Costa (Orthopaedic surgeon, UK)
15 min

KL 10

The role of radiologist in atypical femoral fractures

Fatih Kantarcı (Radiologist, Türkiye)
15 min

Discussion

15 min

HALL 2

Symposium 9

SECONDARY PREVENTION PRACTITIONER – EXTENDING THE TEAM

Moderators

Gülistan Bahat (Geriatrician, Türkiye)
Kassim Javaid (Rheumatologist, UK)

The role of the orthopaedic surgeon

Frede Frihagen (Orthopaedic surgeon, Norway)
8 min

The roles of the geriatrician in the FLS team

Gülistan Bahat (Geriatrician, Türkiye)
8 min

The roles of FLS coordinator vs practitioner: Does it matter?

Peter van den Berg (Nurse practitioner, the Netherlands)
8 min

The roles of physiotherapy in secondary prevention

Gizem İrem Kınıklı (Physiotherapist, Türkiye)
8 min

The opportunities of digital/IT tools in the FLS team

Kassim Javaid (Rheumatologist, UK)
8 min

Discussion

20 min

HALL 3

Free Papers 7

PILLAR 1:
ACUTE CARE

Moderators

Xavier Griffin (Orthopaedic surgeon, UK)
Anette Hylen-Ranhoff (Geriatrician, Norway)

FP-54 **PROXIMAL HUMERUS FRACTURES IN IRISH PATIENTS ≥60 YEARS; SIGNIFICANT PREDICTORS OF SUBSEQUENT FRACTURE AND MORTALITY**
Kate Somers, Aaron Glynn

FP-55 **DETERMINANTS OF DELAYED DISCHARGE IN PATIENTS WITH PERTROCHANTERIC FRAGILITY FRACTURES: A RETROSPECTIVE COHORT STUDY**
Muhammed Yusuf Afacan, Cumhur Deniz Davulcu

FP-56 **IN-HOSPITAL HYPERNATREMIA BEFORE DISCHARGE TO PRIMARY CARE WARDS PREDICTS 90-DAY MORTALITY IN HIP FRACTURE PATIENTS**
Matias Pehkonen, Päivi Korhonen, Sanna Collin, Maria S. Nuotio

FP-57 **PROXIMAL HUMERUS FRACTURES OPERATED WITH ANATOMICAL LOCKING PLATE: MINIMUM 13 YEARS CLINICAL AND RADIOLOGICAL FOLLOW-UP**
Olgar Birsel, İlker Eren, Mehmet Chodza, Mehmet Demirhan

FP-58 **COMPARISON OF THE RESULTS OF LOCKING PLATE OSTEOSYNTHESIS AND CONSERVATIVE TREATMENT OF DISPLACED PROXIMAL HUMERUS FRACTURES**
Uğur Bezirgan, Malik Kismet, Mehmet Armangil

FP-59 **DELIRIUM IN ELDERLY SUBJECTS HOSPITALIZED FOR HIP FRACTURE; CORRELATION TO SURGICAL AND DIFFERENT ANESTHETIC TECHNIQUES**
Elena Bianchi, Sara Rogani, Giulia Pescatore, Antonio Polini, Cristina Cargiolli, Maria Napoleone, Leonarda Maltese, Antonio Polini, Valeria Calsolaro, Michelangelo Scaglione, Fabio Monzani, Agostino Virdis

FP-60 **PREDICTORS, SURVIVORSHIP AND CHALLENGES IN MANAGEMENT OF FRACTURE OF NECK OF FEMUR IN NONAGENARIAN POPULATION**
Peter Peev, Prasanth Nagaraj, Ibrahim Bahri, Saarthak Saxena, Cleo Rowntree

FP-61 **BONE-A-FIDE BREAKTHROUGH: MACHINE LEARNING CRACKS THE CODE ON OSTEOPOROSIS TREATMENT PREDICTIONS**
Nur Atikah Mohd Asri, Azrin Muslim, Suzanne Laffan, Gavin Egan, George Pope, John Cooke, Padraig Bambrick, Riona Mulcahy, Sarah Mello, Niamh O'Regan, Annette McElligott

FP-62 **THE IMPACT OF TRANEXAMIC ACID ON COST AND BLOOD LOSS IN PARTIAL HIP PROSTHESIS SURGERIES FOLLOWING FEMORAL NECK FRACTURE**
Mücahid Osman Yücel, Sönmez Sağlam, Zekeriya Okan Karaduman, Mehmet Arıcan

12 October 2024, Saturday

08:00 – 09:00

HALL 1

Symposium 10

STOPPING THE DOWNWARD SPIRAL BETWEEN FALLS AND FRACTURES
(EuGMS-FFN SYMPOSIUM)

Moderators

Carmelinda Ruggiero (Geriatrician, Italy)
Nathalie van der Velde (Geriatrician, the Netherlands)

Imminent fracture & fall risk: How to prevent recurrent injury?

Nathalie van der Velde (Geriatrician, the Netherlands)
8 min

Nursing interventions counteracting sarcopenia, falls, and frailty

Carmen Queiros (Nurse, Portugal)
8 min

Optimizing fracture (and falls) prevention in older adults with cognitive impairment: The VIVIfrail trial

Alvaro Casas Herrero (Geriatrician, Spain)
8 min

Hip fractures, should we always operate? Outcomes of the FRAIL-hip trial

Hanna Willems (Geriatrician, the Netherlands)
8 min

Fracture and falls prevention in frail older populations: The nursing perspective

Marsha van Oostwaard (Nurse practitioner, the Netherlands)
8 min

Discussion

20 min

HALL 2

Symposium 11

FOSTERING IMMEDIATE POSTOPERATIVE WEIGHT-BEARING IN HIP FRACTURES

Moderators

Ufuk Özkaya (Orthopaedic surgeon, Türkiye)
Gabriele Tucci (Orthopaedic surgeon, Italy)

Surgical treatment options in hip fractures

Ufuk Özkaya (Orthopaedic surgeon, Türkiye)
10 min

Immediate or delayed weight-bearing: A matter of fracture, patient or implant?

Gabriele Tucci (Orthopaedic surgeon, Italy)
10 min

Informal caregivers who support people following hip fracture surgery: The HIP HELPER trial

Klaus Pfeiffer (Geriatrician, Germany)
10 min

Predicting functional recovery

Mary Walsh (Physiotherapist, Ireland)
10 min

Discussion

20 min

HALL 3

Free Papers 8

PILLAR 1:
ACUTE CARE

Moderators

Duygu Erbaş Saçar (Geriatrician, Türkiye)
Lene Solberg (Orthopaedic surgeon, Norway)

FP-63 **PREVALENCE OF COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS**
En Lin Goh, Amulya Khatri, Alexander Costa, Andrew Ting, Kat Steiner, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

FP-64 **RISK FACTORS ASSOCIATED WITH THE DEVELOPMENT OF GENERAL COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE**
En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

FP-65 **NO DIFFERENCE IN DELIRIUM OR COMPLICATIONS AFTER HIP FRACTURE WHEN COMPARING TWO MODELS OF ORTHOGERIATRIC CARE**
Lene Bergendal Solberg, Birgitte Regine Nydal, Elise Berg Vesterhus, Silje Stuksrud, Nina Ommundsen

FP-66 **CHARACTERISTICS OF OLDER HIP FRACTURE PATIENTS – A CHANGING TREND**
Anette Hylen Ranhoff, Marianne Lid Kvaale, Tim Nansen, Mette Martinsen, Mads Sundet

FP-67 **RISK FACTORS ASSOCIATED WITH THE DEVELOPMENT OF SURGERY-SPECIFIC COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE**
En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

FP-68 **THE ROLE OF MACHINE LEARNING FOR SURVIVAL ANALYSIS IN PATIENT SUSTAINING NECK OF FEMUR FRACTURES**
Faizal Rayan, Abdul-Rahman Gomaa, Aatif Aatif, Andrei Morozov

FP-69 **PRESSURE ULCERS IN HIP FRACTURE PATIENTS UNDERGOING SURGERY AT LANDSPÍTALI FROM 2013 TO 2018**
Sigrun Sunna Skuladottir, Kolbrun Kristinasen , Ingibjorg Hjaltadottir

FP-70 **WOULD YOU PREFER OSTEOSYNTHESIS OR ARTHROPLASTY?**
Yiğit Önaloğlu, Volkan Karaduman

FP-71 **MULTIDISCIPLINARY APPROACH TO OLDER PATIENTS WITH OSTEOPOROSIS AND CHRONIC KIDNEY DISEASE: CHALLENGING CASES**
Ezgi Pinar, Zeynep Fetullahoglu, Sirin Zelal Sahin Tirnova, Serdar Ozkok, Nurdan Gul, Ozlem Soyluk Selcukbiricik, Gulsah Yenidunya Yalin, Savas Ozturk, Mehmet Akif Karan, Gulistan Bahat

12 October 2024, Saturday

09:10 – 10:10

HALL 1

Keynote Lectures

Moderators

Stefano Eleuteri (Psychologist, Italy)
Tuğçe Özekli Mısırlıoğlu (PRM specialist, Türkiye)

KL 11

Patient-centred care

Charlotte Myhre Jensen (Nurse, Denmark)
15 min

KL 12

Comprehensive assessment driven management: When, why and how?

Maria Panourgia (Geriatrician, UK)
15 min

KL 13

Delirium and fragility fractures

Alasdair MacLullich (Geriatrician, UK)
15 min

Discussion

15 min

HALL 2

Symposium 12

SETTING UP AN ORTHOGERIATRIC WARD

Moderators

Anette Hylen-Ranhoff (Geriatrician, Norway)
Kolbrún Kristiansen (Nurse, Iceland)

First: Working as an integrated team

Lene Solberg (Orthopaedic surgeon, Norway)
8 min

Be aware of resources and savings

Anette Hylen-Ranhoff (Geriatrician, Norway)
8 min

Grasping opportunities and overcoming obstacles

Kolbrún Kristiansen (Nurse, Iceland)
8 min

Developing orthogeriatric nursing in Türkiye

Hayriye Ünlü (Nurse, Türkiye)
8 min

Benefits and challenges of an orthogeriatric module into GP's training

Irewin Tabu (Orthopaedic Surgeon, Philippines)
8 min

Discussion

20 min

HALL 3

Free Papers 9

PILLAR 2: REHABILITATION

Moderators

David Keene (Physiotherapist, UK)
Filiz Can (Physiotherapist, Türkiye)

FP-72 **EXERCISE TRAINING IN PEOPLE WITH OSTEOPOROTIC FRACTURE AND FEAR OF FALLING**
Sahar Johari, Joy Christine MacDermid, Laura Graham, Christina Ziebart, Erfan Sahfiee

FP-73 *This free paper was not presented*

FP-74 **PILATES VS. AEROBIC TRAINING: EFFECTS ON PHYSICAL PERFORMANCE AND BLOOD VALUES IN ELDERLY WITH MILD COGNITIVE IMPAIRMENT**
Emir İbrahim Işık, Selda Başar, Gülçin Dağlıoğlu

FP-75 **DOES FEAR OF FALLING CORRELATED WITH BALANCE, FUNCTIONAL INDEPENDENCE AND ACTIVITY OF DAILY LIVING IN OLDER PEOPLE?**
Filiz Can, Emin Ulaş Erdem, Dimitri Chan, İpek İkiz

FP-76 **INFORMAL CAREGIVER BURDEN OF PATIENTS WITH HIP FRACTURE: THE FORGOTTEN LINK IN THE CARE PROCESS?**
Cristina Ojeda-Thies, Paula Gil-Vicedo, Francisco Soria-Perdomo

FP-77 **THE IMPLEMENTATION OF AN ACTIVITY AND MOBILITY PROGRAMME ON A FRACTURED NECK OF FEMUR WARD TO PREVENTION DECONDITIONING**
Charlene Lawrence-Douglas, Rebecca Ferneyhough

FP-78 **COMMON EXERCISE MODALITIES AND OUTCOME MEASURES FOR OLDER ADULTS WITH HIP FRACTURE AND COGNITIVE IMPAIRMENT IN DENMARK**
Jan Arnholtz Overgaard, Morten Tange Kristensen, Lauren Alison Beaupre, Kristian Steen Frederiksen, Søren T. Skou

FP-79 **ASSOCIATION OF DIFFERENT FRAILTY SCREENING TOOLS WITH DEPENDENCY AND DYSPHAGIA AMONG THE OLDER OUTPATIENTS**
Fatma Ozge Kayhan Kocak, Sibel Çavdar, Sumru Savaş, Fulden Saraç

FP-80 **UNDER THE RADAR: PHYSIOTHERAPISTS' TREATMENT OF PEOPLE WITH PARKINSON'S DISEASE IN HIP FRACTURE CARE**
Kirsten Dous

12 October 2024, Saturday

10:30 – 11:30

HALL 1

Symposium 13

USEFUL PHARMACEUTICAL INTERVENTION IN THE ACUTE PHASE

Moderators

Bedri Karaismailoğlu (Orthopaedic surgeon, Türkiye)
Şansın Tüzün (PRM specialist, Türkiye)

The use of intravenous zoledronate after hip fracture: Who benefits more?

Lene Solberg (Orthopaedic surgeon, Norway)
10 min

Thromboprophylaxis: Different options and duration of treatment

Bedri Karaismailoğlu (Orthopaedic surgeon, Türkiye)
10 min

Very high fracture risk management in FLS setting, why does it matter?

Şansın Tüzün (PRM specialist, Türkiye)
10min

Type and timing of intravenous iron therapies: Pros and cons

Marta Baroni (Geriatrician, Italy)
10 min

Discussion

20 min

HALL 2

Symposium 14

NUTRITIONAL NEEDS AMONG OLDER ADULTS FROM HOSPITAL STAY TO COMMUNITY

Moderators

Jack Bell (Clinical and research dietitian, Australia)
Ólöf Geirsdóttir (Dietitian - Nutritionist, Iceland)

Principles of nutrition in the acute and post-acute orthogeriatric phases

Ólöf Geirsdóttir (Dietitian - Nutritionist, Iceland)
10 min

Geriatric nutrition ESPEN guidelines/PROMISS project

Jack Bell (Clinical and research dietitian, Australia)
10 min

Enteral and parenteral nutritional support for polymorbid inpatients

Tuğba Erdoğan (Geriatrician, Türkiye)
10 min

The persistent low vitamin D in the community: It needs a solution

James Bernard Walsh (Geriatrician, Ireland)
10 min

Discussion

20 min

HALL 3

Free Papers 10

PILLAR 1:
ACUTE CARE

Moderators

Kolbrún Kristiansen (Nurse, Iceland)
Alasdair MacLullich (Geriatrician, UK)

FP-81 **COMPLICATION PROFILE OF HIP FRACTURE PATIENTS TREATED WITH ARTHROPLASTY**
En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

FP-82 **THE IMPACT OF PREOPERATIVE DAY 1 ELECTROLYTE IMBALANCE ON HOSPITAL STAY AND AMBULATION TIME FOR HIP FRAGILITY FRACTURES**
Cumhur Deniz Davulcu, Muhammed Yusuf Afacan

FP-83 **CLINICAL FRAILTY SCORES (CFS) IN NECK OF FEMUR FRACTURES (NOF): A VALID TOOL IN PREDICTING POST OPERATIVE OUTCOMES**
Victoria Ahmed, Bassel Abouzeid , Apurba Chatterjee

FP-84 **HEMIARTHROPLASTY, TOTAL HIP ARTHROPLASTY, AND INTERNAL FIXATION FOR HIP FRACTURES IN PATIENTS OVER 80 YEARS OF AGE**
Kadir Uzel, Murat Birinci, Ömer Serdar Hakyemez, Bilal Bostancı, İzzet Bingöl, Naim Ata, Mustafa Okan Ayvalı, Mahir Ülgü, Şuayip Birinci, Vasfi Karatosun, Bülent Atilla, İbrahim Azboy

FP-85 **COMPLICATION PROFILE OF HIP FRACTURE PATIENTS TREATED WITH INTERNAL FIXATION**
En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

FP-86 **IMPACT OF MALNUTRITION IN PATIENTS WITH HIP FRACTURE IN THE SPANISH NATIONAL HIP FRACTURE REGISTRY (RNFC)**
Patricia Ysabel Condorhuamán-Alvarado, Teresa Pareja Sierra, Angélica Muñoz Pascual , Cristina Ojeda Thies, Cristina González de Villaumbrosia, Paloma Gómez Campelo, Gabriela Ivonne Morales Mena, Gloria Elizabeth Toapanta Yanza, Arquímedes Oramas González, Melissa Marelia Villarroel Espinoza, Iris Riera Carlos, Juan Ignacio González Montalvo, Pilar Sáez López

FP-87 **WHAT ABOUT RIB FRACTURES IN OLD AND FRAIL PATIENTS?**
Anette Hylen Ranhoff, Marinne Lid Kvaale, Tim Nansen, Mette Martinsen, Mads Sundet

FP-88 **DISTAL RADIUS FRACTURE RELATION WITH OSTEOPOROSIS RETROSPECTIVE STUDY IN OUR CLINIC**
Yunus Şamil Gönüldenk, Uğur Bezirgan

FP-89 **RETROSPECTIVE ANALYSIS OF CUT-OUT RISK IN PROXIMAL FEMORAL NAILING IN PATIENTS WITH INTERTROCHANTERIC FEMUR FRACTURES**
Ali Baş, Ata Cem Akbaba, Olgar Birsel, Caner Günerbüyük, Mehmet Ali Deveci

12 October 2024, Saturday

11:40 – 12:20

HALL 1

Sponsored Symposium 2

NUTRICIA
FROM FRAGILITY TO STABILITY: THE ROLE OF MEDICAL NUTRITION IN THE MULTIMODAL MANAGEMENT OF OLDER PATIENTS

Chair

Jack Bell (Clinical and research dietitian, Australia)

Simpler: A new simplified nutrititonal care pathway for hip fracture patients

Jack Bell (Clinical and research dietitian, Australia)

The scientific basis of nutrition and exercise interactions for optimising musculoskeletal recovery of the older orthopedic patient

Phillip Atherton (Metabolic & Molecular Physiology, UK)

HALL 2

HALL 3

Free Papers 11

PILLAR 3:
SECONDARY PREVENTION

Moderators

Gülistan Bahat (Geriatrician, Türkiye)
Polyzois Makras (Endocrinologist, Greece)

FP-90 **RATIONALISING DXA REQUIREMENTS IN FRACTURE LIAISON SERVICE**
Leena Rodrigues, Emily Carey, Timothy Geraghty, Rachel Crowley, Rachael Doyle, Claire Murphy, Ian Callanan

FP-91 **IMPROVING BISPHOSPHONATE THERAPY COVERAGE FOR PATIENTS WITH FEMORAL FRACTURE IN THE PERI-OPERATIVE PERIOD**
Ana de Matos Valadas, Marissa Hagan

FP-92 *This free paper was not presented*

FP-93 **NUTRITIONAL STATUS AND ITS EFFECT ON MORTALITY AFTER HIP FRACTURE**
Betül Gülsüm Yavuz Veizi, Şahan Güven, Enejd Veizi

FP-94 **SHOULD WE CONSIDER PERIPROSTHETIC HIP FRACTURE A FRAGILITY FRACTURE?**
Fransiska Guerreiro, Mark Baxter, Simon Tilley

FP-95 **ASSESSMENT OF FRACTURED PATIENTS IN TERMS OF PATIENT-LEVEL KEY PERFORMANCE INDICATORS IN THE FRACTURE LIAISON SERVICES**
Pınar Karslı Çebi, Rana Terlemez, Deniz Palamar Kadıoğlu, Zeynep Ülkü Akarırmak, Önder Aydıngöz, Şansın Tüzün

12 October 2024, Saturday

13:20 – 14:40

HALL 1	HALL 2	HALL 3
Plenary Lectures		

Moderators

Karen Hertz (Nurse, UK)
David Marsh (Orthopaedic surgeon, UK)

PL 5

Orthogeriatrics as a value based health care model

Carmelinda Ruggiero (Geriatrician, Italy)
20 min

PL 6

Cemented hemiarthroplasty for all?

Frede Frihagen (Orthopaedic surgeon, Norway)
20 min

PL 7

Mobile-health intervention for older adults with hip fracture and family caregivers

Patrocinio Ariza Vega (Occupational therapist, Spain)
20 min

PL 8

Implementing nutritional care: Whose responsibility is it?

Jack Bell (Clinical and research dietitian, Australia)
20 min

12 October 2024, Saturday

14:50 – 16:00

HALL 1

Keynote Lectures

Moderators

Anette Hylen-Ranhoff (Geriatrician, Norway)
Stefanny Guerra (Researcher, UK)

KL 14

Treatment of vertebral fragility fractures

Haluk Berk (Orthopaedic surgeon, Turkey)
15 min

KL 15

Assessment of Individual fracture risk: FRAX and beyond

Şansın Tüzün (PRM specialist, Türkiye)
15 min

KL 16

The effect of physical activity and exercises on sarcopenia

Filiz Can (Physiotherapist, Türkiye)
15 min

Discussion

25 min

HALL 2

Symposium 15

UNSOLVED INTERDISCIPLINARY REHABILITATION NEEDS 120 DAYS AFTER HIP FRACTURE – RECOVERY, FALLS AND FRACTURE PREVENTION

Moderators

Carmelinda Ruggiero (Orthogeriatrician, Italy)
Mary Walsh (Physiotherapist, Ireland)

Interdisciplinary fracture liaison service improving health-related outcomes and survival after hip fracture

Carmelinda Ruggiero (Orthogeriatrician, Italy)
11 min

Experiences from geriatrician outpatient clinic at four-months after hip fracture

Luana Sandoval Castillo (Orthogeriatrician, Denmark)
11 min

Community-based secondary falls prevention among frail older adults – A focus on motor control, ergonomics and sarcopenia

Maria Tsekoura (Physiotherapist, Greece)
11 min

Implementing 120-day hip fracture follow-up and outcome collection in Ireland: Virtual physiotherapy and nurse-led clinics and what we have learned about patients' unmet needs

Mary Walsh (Physiotherapist, Ireland)
11 min

Group Discussion

26 min

HALL 3

Free Papers 12

PILLAR 1:
ACUTE CARE

Moderators

Bedri Karaismailoğlu (Orthopaedic surgeon, Türkiye)
Mehmet Can Ünlü (Orthopaedic surgeon, Turkey)

FP-96 **TROCHANTERIC VERSUS FEMORAL NECK FRACTURES IN FEMALES: WHAT ARE THE DIFFERENCES?**
Mads Sundet, Ulf Sundin, Mette Martinsen, Karin Hesseberg, Sylvia Sunde, Kristian Sydnes, Maren Paus, Siri Lillegraven

FP-97 **HIGH PROTEIN MILKSHAKE VS HIGH PROTEIN DRINK INTAKE AND PALATABILITY IN FRACTURED NECK OF FEMUR ELDERLY PATIENTS**
Charlotte Gall, Samuel Barrett, Abdulmalik Timamy, Neha Mukherjee, Rama Al-Ayta, Henry Olwes, Mohamed H. Ahmed, Maria Panourgia

FP-98 **PATIENT'S EXPERIENCES OF SHARED DECISION-MAKING, WHEN CHOOSING TREATMENT FOR DISTAL RADIUS FRACTURE; A QUALITATIVE STUDY**
Charlotte Abrahamsen, Ane Simony, Louise Marie Nøhr

FP-99 **DETERMINATION OF ELDERLY PATIENTS' POSTOPERATIVE OUTCOMES ACCORDING TO THEIR FRAILTY LEVELS BEFORE ARTHROPLASTY SURGERY**
Özlem Bilik, Buket Çelik, Hale Turhan Damar

FP-100 **SURGICAL OUTCOMES OF CABLE PLATE FIXATION IN TREATMENT OF VANCOUVER TYPE B1 AND TYPE C PERIPROSTHETIC FEMORAL FRACTURES**
Cengiz Şen, Mehmet Demirel, Taha Kızılkurt, Ahmet Muçteba Yıldırım, Yavuz Sağlam, İrfan Öztürk

FP-101 **TO DISCUSS THE COMPLEXITIES OF RECRUITING OLDER ADULTS TO TRAUMA STUDIES**
Kathryn Lewis

FP-102 **DO TRACTION-INTERNAL ROTATION X-RAYS HAVE AN EFFECT ON SURGICAL PROCEDURE IN TREATMENT OF HIP FRACTURE**
Taha Furkan Yağcı, Emre Kocazeybek, Mehmet Demirel, Yavuz Sağlam, Cengiz Şen

FP-103 **TOTAL EXTRAPERITONEAL APPROACH IN ORTHOPEDIC SURGERY USING BCFC AND BCS IN A GERIATRIC ACETABULAR FRACTURE CASE**
Vedat Öztürk, Mustafa Gökhan Bilgili

FP-104 **RISK FACTORS FOR IMPLANT FAILURE IN GERIATRIC PERTROCHANTERIC FRACTURES TREATED WITH CEPHALOMEDULLARY NAIL (INTERTAN)**
Emre Özmen, Ahmet Müçteba Yıldırım, Taha Furkan Yağcı, Murat Altan, Ali Erşen, Yavuz Sağlam

FP-105 **TRIMALLEOLER FRACTURES OF THE ELDERLY: DO FRACTURE MORPHOLOGY AND DEMOGRAPHIC CHARACTERISTICS DIFFER FROM THE YOUNG?**
Batuhan Gencer, Ufuk Arzu, Turgut Dinçal, Yılmaz Kerem Akayoğlu, Deniz Gülabi

FP-106 **ANTIBIOTIC PROPHYLAXIS IN NECK OF FEMUR FRACTURE**
Mohamed Wahb, Faizal Rayan

12 October 2024, Saturday

16:15 – 17:15

HALL 1

Symposium 16

FRACTURE LIAISON SERVICE (FLS) COMPETENCIES

Moderators

Kassim Javaid (Rheumatologist, UK)
Şansın Tüzün (PRM specialist, Türkiye)

Why and how to use the FFN FLS competencies for you and your FLS?

Kassim Javaid (Rheumatologist, UK)
4 min

What are in the FLS competencies?

Peter van den Berg (Nurse practitioner, the Netherlands)
12 min

Nationalisation of the FLS competencies

Şansın Tüzün (PRM specialist, Türkiye)
8 min

Nationalisation of the FLS competencies – What would change?

Elias Panagiotopoulos (Orthopaedic surgeon, Greece)
8 min

FLS competencies: Next steps

Peter van den Berg (Nurse practitioner, the Netherlands)
8 min

Discussion

20 min

HALL 2

Symposium 17

CONCERNS ABOUT FALLS - WHY IT'S IMPORTANT, WHO IS AT RISK, AND HOW MAY WE OVERCOME THIS?

Moderators

Toby Ellmers (Psychologist, UK)
Katie Sheehan (Physiotherapist, UK)

Concerns about falls - What is it, how to measure it, and update from the World Falls Guidelines

Toby Ellmers (Psychologist, UK)
9 min

Concerns about falls – Who is at risk?

Stefanny Guerra (Researcher, UK)
9 min

Concerns about falls - How to manage it?

Stefano Eleuteri (Psychologist, Italy)
9 min

Training physiotherapists in psychological strategies to change behaviour among older people with concerns about falls after hip fracture

Emma Godfrey (Psychologist, UK)
9 min

Discussion

24 min

HALL 3

Free Papers 13

MISCELLANEOUS

Moderators

Nurhan Bayraktar (Nurse, Türkiye)
Mehmet Fatih Güven (Orthopaedic surgeon, Türkiye)

FP-107 **BETWEEN-HOSPITAL VARIABILITY IN THE MANAGEMENT AND OUTCOMES OF POST-OPERATIVE PERIPROSTHETIC FEMORAL FRACTURES**
Alex Bottle, Anthony Johansen, Mark Baxter, Mohammad Aryaie

FP-108 *This free paper was not presented*

FP-109 **FRACTURE LIAISON SERVICE – WHAT ABOUT COSTA FRACTURES?**
Ane Djuv, Oda Horpestad, Hege Nysted, Fredrik Birkeland, Toril Kirkhus

FP-110 **COMPARISON OF PHYSICAL PARAMETERS, RISK LEVELS, SLEEP QUALITY, KINESIOPHOBIA IN POSTMENOPAUSAL WOMEN WITH FALL HISTORY**
Ender Angın, Ayşen Karaman, Özde Depreli, Sevim Öksüz, Süleyman Güzelşemme

FP-111 **AGE-BASED COMPARISON OF FRAGILITY HIP FRACTURES IN MALAYSIA: CLINICAL CHARACTERISTICS AND OUTCOMES**
Malarkodi Suppamutharwyam, Reena Nadarajah, Tunku Muzafar Shah Tunku Jaafar Laksmana

FP-112 **THE RELATIONSHIP OF EASY FALL-INDUCED FEMORAL INTERTROCANTERIC FRACTURES AND NEUROLOGICAL DISORDERS**
Kaan Tan, Yiğit Önaloğlu

FP-113 **ANALYSIS OF VARIOUS PARAMETERS IN PATIENTS WHO SURVIVED AND DID NOT SURVIVE FIVE YEARS AFTER HIP FRACTURE SURGERY**
Cumhur Deniz Davulcu, Ulaş Yavuz, Mahmut Kürşat Özşahin, Ali Şeker, Mehmet Fatih Güven, Gökhan Kaynak, Mehmet Can Ünlü

FP-114 **ENHANCING QUALITY OF CARE IN NECK OF FEMUR FRACTURE MANAGEMENT THROUGH TRAUMA NURSE PRACTITIONERS**
Dipak Jayesh Karavadara, Faizal Rayan, Sayyied Kirmani

FP-115 **INVESTIGATION OF THE PREVALENCE OF FRAGILITY FRACTURES IN NURSING HOMES AND GENERAL POPULATION: A RETROSPECTIVE ANALYSIS**
Cumhur Deniz Davulcu, Derya Akbaba

12 October 2024, Saturday

17:30 – 18:30

HALL 1

Keynote Lectures

Moderators

Bruno Carvalho (Anaesthesiologist, Portugal)
Julie Santy-Tomlinson (Nurse, UK)

KL 17

Top tips for prevention of the denosumab off effect

Polyzois Makras (Endocrinologist, Greece)
15 min

KL 18

Educational needs of health care professionals: How to intervene?

Stefano Eleuteri (Psychologist, Italy)
15 min

KL 19

Stepping forward: Advances in ankle fracture management and rehabilitation

David Keene (Physiotherapist, UK)

15 min

Discussion

15 min

HALL 2

Symposium 18

NEUROCOGNITIVE PROBLEMS IN ORTHOGERIATRIC PATIENTS

Moderators

Maria S. Nuotio (Geriatrician, Finland)
Çağrı Poyraz (Psychiatrist, Türkiye)

Management of most common neurocognitive problems in the elderly

Çağrı Poyraz (Psychiatrist, Türkiye)
12 min

Effects of dementia on the care of orthogeriatric patients

Duygu Erbaş Saçar (Geriatrician, Türkiye)
12 min

Nursing care of orthogeriatric patients with neurocognitive problems

Çiğdem Canbolat Seyman (Nurse, Türkiye)
12 min

Assessing cognitive function in patients with a fragility fracture following hospital discharge

Maria S. Nuotio (Geriatrician, Finland)
12 min

Discussion

12 min

HALL 3

Free Papers 14

PILLAR 3: SECONDARY PREVENTION

Moderators

Mustafa Gökhan Bilgili (Orthopaedic surgeon, Turkey)
Şansın Tüzün (PRM specialist, Türkiye)

FP-116 **EFFECT OF RECURRENT FALLS POST-HIP FRACTURE SURGERY ON SENSORY PROCESSING, PHYSICAL PERFORMANCE AND FALLS**
Sena Erarslan, Onur Turan, Zeynep Bahadır, Barış Yılmaz

FP-117 **BONE DENSITOMETRY AND TREATMENT AFTER FRAGILITY FRACTURE IN OLDER PEOPLE WITH SEVERE MENTAL ILLNESS IN UK PRIMARY CARE**
Christina Avgerinou, Juan Carlos Bazo-Alvarez, Irene Petersen, Patricia Schartau, David Osborn, Robert Michael West, Kate Walters

FP-118 **EFFECTIVENESS OF THE NEW FALL PREVENTION PATHWAY IN OSLO, NORWAY**
Ruth Aga, Kristin Holvik, Anne Johanne Søgaard, Haakon E. Meyer

FP-119 **CAN OBSTETRIC PARAMETERS IMPROVE THE ACCURACY OF POSTMENOPAUSAL FRAGILITY FRACTURE RISK EVALUATION USING THE FRAX® TOOL?**
Erdem Aras Sezgin, Aydan Sezgin, Huriye Güvenç Saçıntı, Elşad Osmanlı, Kübra Mangır, Koray Görkem Saçıntı

FP-120 *This free paper was not presented*

FP-121 **EFFECT OF INTRODUCING A FRACTURE LIAISON SERVICE IN A SMALL HOSPITAL ON PATIENT OUTCOMES**
Daniela Schweppenhäuser, Manfred Förtsch

FP-122 **EFFICACY AND SAFETY OF TERIPARATIDE THERAPY IN PATIENTS WITH OSTEOPOROSIS AND FALLS**
Anna Konstantinovna Ilyushchenko, Natalia Olegovna Khovasova, Ekaterina Nailevna Dudinskaya, Lyubov Viktorovna Matchekhina, Julia Sergeevna Onuchina, Anton Vyacheslavovich Naumov, Olga Nikolaevna Tkacheva

FP-123 **OVERCOMING A TREATMENT BARRIER – SETTING UP A HOME-BASED OSTEOPOROSIS TREATMENT WITH ZOLEDRONATE (HOTZ) SERVICE**
Elaine Butler, Eleanor Hogan, Noeleen Sheridan, Joanna Carroll, Frances Dockery

FP-124 **SLEEP QUALITY AND FEAR OF FALLING IN PATIENTS WHO HAD KNEE ARTHROPLASTY: A PILOT STUDY**
Sevim Akbal

18:35 – 19:00

HALL 1

AWARD CEREMONY AND CLOSING

POSTERS

P-1 **NUTRITIONAL AND FUNCTIONAL STATUS OF OLDER ADULTS RECEIVING SUPPORTIVE HOME CARE: THE POWER STUDY**
Catherine M. Fallon, Caitriona G. Cunningham, Katy Horner, Clare A. Corish

P-2 **EFFECTS OF PHYSICAL ACTIVITY LEVELS ON QUALITY OF LIFE, KINESIOPHOBIA, PAIN, AND FATIGUE IN PATIENTS WITH GONARTHROSIS**
Sezen Karaborklu Argut

P-3 **EXPLORING LINK BETWEEN HIP FRAGILITY FRACTURES AND OSTEOPOROSIS: IMPACT ON FRACTURE LOCATION AND PREVENTION STRATEGIES**
Cumhur Deniz Davulcu, Derya Akbaba

P-4 **HIP FRACTURE SECONDARY PREVENTION – UNDERSTANDING CLINICIANS REASONS FOR NOT USING IV ZOLEDRONATE IN DIFFERENT COUNTRIES**
YuenKang Tham, Antony Johansen, Opinder Sahota, Frances Dockery, Alison J. Black, Alasdair M. J. MacLullich, Kassim Javaid, Emer Ahern, Celia Gregson

P-5 **IMPORTANT FACTORS INCREASING MORTALITY IN ELDERLY INTERTROCHANTERIC FEMUR FRACTURES**
Volkan Karaduman, Yiğit Önaloğlu

P-6 **IMPACT OF COMPLICATIONS ON QUALITY OF LIFE AFTER HIP FRACTURE**
En Lin Goh

P-7 **NURSING GUIDELINE ON FRACTURE PREVENTION FOR NURSES AND NURSE PRACTITIONERS IN THE NETHERLANDS: A WORLDWIDE FIRST**
Marsha Van Oostwaard, Mariska Tuut, Amy Den Haan, Ingeborg Ter Beek, Esther Appelman, Natasja Appelman Dijkstra, Willeke Beex van den Broek, Luc Maartens, Odette Van Eden, Inge Wiese, Thea Zaal, Peter Van den Berg

P-8 *This poster was not presented*

P-9 **DUTCH SECONDARY FRACTURE PREVENTION COURSE FOR NURSES: IMPROVED GRADUATION IF IN THEIR PROFESSIONAL ASSOCIATION`S HANDS**
Peter van den Berg, Marsha van Oostwaard, Mariëlle van Echtelt, Esther Appelman, Josje Hamers, Ingrid Draaijer

P-10 *This poster was not presented*

P-11 **TRENDS IN PROXIMAL FEMUR FRACTURES: HOSPITALIZATION, MORTALITY, AND INCIDENCE IN PORTUGAL 2006-2010 AND 2018-2022**
Georgina Pimentel, Andréa Marques, Paulo Lourenço, José António Pereira da Silva

P-12 **THE EFFECT OF FRAGILITY FRACTURE INTEGRATED REHABILITATION MANAGEMENT IN HIP FRACTURE PATIENTS WITH COGNITIVE IMPAIRMENT**
Kyung Mook Seo, Ryeojin Lee, Yeong Kyun Bae, Jae-Young Lim

P-13 **ESTABLISHING A FRACTURE LIAISON SERVICE IN A CENTER FOR THE MUSCULOSKELETAL SYSTEM AT THE CANTONAL HOSPITAL BASELLAND**
Maria Pfefferle, Claudia Haag, Adrian Stuetzle, Christian Bernhard Frank

P-14 *This poster was not presented*

P-15 **EDUCATION USING NOTICES AND POSTERS DISPLAYED ACROSS THE WALLS OF HOSPITAL WARDS - IS IT EFFECTIVE?**
Amunpreet Sahota, Pramudi Wijayasiri, Htet Than, Mosin Munir, Opinder Sahota

P-16 *This poster was not presented*

P-17 **TWO OUT OF THREE PATIENTS DO NOT REGAIN MOBILITY THE FIRST THREE MONTHS AFTER A HIP FRACTURE: A LONGITUDINAL STUDY**
Karin Hesseberg, Anette Hylen Ranhoff, Mads Sundet, Ulf Sundin, Siri Lillegraven, Mette Martinsen, Maren Paus, Sylvia Sunde

P-18 **A REVIEW OF BONE HEALTH INTERVENTIONS IN A RAPID ACCESS FRAILTY SERVICE**
Michael Mc Kenna, Rachel Byrne, David Bertilla, Mubashir Hassan, Sabir Rehman, John Doherty, Teresa Donnelly

P-19 **PREDICTORS FOR PHYSICAL FUNCTION THREE MONTHS AFTER HIP FRACTURE SURGERY IN OLDER ADULTS**
Sylvia Sunde, Anette Hylen Ranhoff, Mads Sundet, Ulf Sundin, Siri Lillegraven, Maren Paus, Mette Martinsen, Karin Hesseberg

P-20 **PREDICTIVE FACTORS OF GAIT RECOVERY AFTER HIP FRACTURE: A SCOPING REVIEW**
Cristina González de Villaumbrosia, Raquel Barba Martín, Teresa Álvarez de Espejo Montiel, Patricia Condorhuamán Alvarado, Cristina Ojeda Thies, Jesús Mora Fernández, José Manuel Cancio Trujillo, Teresa Pareja Sierra, Pilar Sáez López

P-21 **DEVELOPING A DEEP LEARNING-BASED ARTIFICIAL INTELLIGENCE MODEL FOR THE CLASSIFICATION OF PROXIMAL FEMUR FRACTURES**
Ahmet Hamdi Olçar, Özgür Karakoyun, Hubeyb Ünal

P-22 **DELIRIUM ASSOCIATION WITH TIME TO THEATRE AND TOTAL ANAESTHETIC TIME IN ELDERLY PATIENTS WITH FRACTURED NECK OF FEMUR**
Helia Tahmasvand, Hannah Allawi, Nikos Reissis, George Adamoudis, Mohamed H Ahmed, Maria Panourgia

P-23 **MEASUREMENT OF FASTING TIME AND PREPARATION FOR SURGERY FOR 67 YEARS AND OLDER WITH HIP FRACTURE**
Thuridur Geirsdóttir, Arun Kristin Sigurdardottir, Lara Borg Asmundsdottir

P-24 **PREDICTORS OF PERITROCHANTERIC FRACTURE OUTCOME OF 1-YEAR MORTALITY IN ELDERLY UNDERGOING VARIOUS TREATMENT**
Tzu-Chieh Lin, Wen-Miin Liang

P-25 **ASSOCIATION OF FRAILTY MEASURES WITH READMISSIONS AND LENGTH OF STAY IN AN ORTHOGERIATRIC HIP FRACTURE PROGRAMME**
Kiat Sern Goh, Shiela Panao Arroyo

P-26 *This poster was not presented*

P-27 **HETEROTOPIC OSSIFICATION AND AVASCULAR NECROSIS AFTER FEMORAL NECK FRACTURE IN CEREBROTENDINOUS XANTHOMATOSIS**
Ali Baş, İbrahim Selçuk Tutuş, Olgar Birsel, Sezai Aykın Şimşek

P-28 **MID TO LONG TERM OUTCOMES OF INTERTROCHANTERIC FRACTURE MANAGEMENT USING DOUBLE LAG SCREW PROXIMAL FEMORAL NAIL**
Salih Candost Yetişmiş, Muhammed Yusuf Afacan, Hüseyin Botanlıoğlu, Ali Şeker

P-29 **DIFFERENCE IN HEALING TIME BETWEEN ATYPICAL AND SUBTROCHANTERIC FRACTURES**
Olgar Birsel, Buğra Güllü, Ali Baş, Caner Günerbüyük, Mehmet Ali Deveci

P-30 *This poster was not presented*

P-31 **RUSS-AGE: GERIATRIC STATUS OF OLDER PARTICIPANTS WITH AND WITHOUT OSTEOPOROSIS**
Anna Konstantinovna Ilyushchenko, Lyubov Viktorovna Matchekhina, Eva Maria Shelley, Aleksandra Andreevna Melnitskaia, Andrey Alexandrovich Tyazhelnikov, Irina Vasilievna Alekseenko, Olga Nikolaevna Tkacheva, Irina Dmitrievna Strazhesko

P-32 **COMPLIANCE WITH LOCAL POLICY FOR MENTAL CAPACITY ACT FOR FRAGILITY FRACTURE PATIENTS >75 YEARS OLD**
Jenny Lai, Wei Jia Cheeng

P-33 **COMPARISON OF FRAILTY SCREENING INSTRUMENTS ON PREDICTIVE OF DEPENDENCY IN THE OLDER INPATIENTS**
Fatma Ozge Kayhan Kocak, Musa Gürsu Şama

P-34 *This poster was not presented*

P-35 **ORTHO-G PLUS – A SUSTAINABLE GERIATRIC SERVICE TO ORTHOPAEDIC INPATIENTS WITH NON-HIP FRAGILITY FRACTURES**
Rachelle Tan-Patanao, Alexis Ang, Kiat Sern Goh

P-36 **ACCELERATING ORTHOPAEDIC ADMISSION TIMES: ENHANCING EFFICIENCY AND PATIENT OUTCOMES**
Ashling Whelan, Máire Gilmartin, Nessa O'Herlihy, Aoife Halpin, Lorna Flanagan, Rosa McNamara, Patrick Hillery, Conor Hurson

P-37 **HIP FRACTURES IN OLDER ADULTS: OPERATIVE VERSUS CONSERVATIVE MANAGEMENT**
Malarkodi Suppamutharwyam, Reena Nadarajah, Tunku Muzafar Shah Tunku Jaafar Laksmana

P-38 **INCREASING THE UPTAKE OF IV ZOLEDRONIC ACID IN PATIENTS OVER 65 YEARS OF AGE FOLLOWING A HIP FRACTURE**
Gokulan Suthermaraj, Tefera Zerihun, Dawn Coventry, Lesley Morrow, Aysha Anjum

P-39 **INPATIENT FALLS RESULTING IN SERIOUS INCIDENTS (SIS): A TRUST-WIDE REVIEW**
Natalie Simone Pettit, Zak Ahmad, Zeinab Majid, Huma Naqvi

P-40 **BIOELECTRICAL IMPEDANCE VECTOR ANALYSIS BASED ON NUTRITIONAL RISK IN ELDERLY HIP FRACTURE PATIENTS**
Seung-Kyu Lim, Yoonhee Kim, Jae-Young Lim

P-41 **HIP AND KNEE ARTHROPLASTY IN SOLID ORGAN TRANSPLANT PATIENTS: RESULTS FROM A TURKISH GOVERNMENT-BASED HEALTH REGISTRY**
Mehmet Kürşat Yılmaz, Ömer Serdar Hakyemez, Murat Birinci, İzzet Bingöl, Naim Ata, Mahir Ülgü, Suayip Birinci, İbrahim Azboy, Fahri Erdoğan

P-42 **FEMORAL NERVE PALSY DUE TO MIGRATION OF LESSER TROCHANTER FRAGMENT MASKED BY DELIRIUM, ANXIETY AND POST-FALL SYNDROME**
Adrian Stützle, Georg Antonio Bernecker, Massimo Ruffo, Christoph Rouden, Christian Bernhard Frank

P-43 **DOES DIABETES MELLITUS TYPE 2 AFFECT BONE MINERAL DENSITY IN ELDERLY HIP FRACTURED PATIENTS**
Ioannis Papaionnou, Georgia Pantazidou, Thomas Repantis, Andreas Baikousis

P-44 *This poster was not presented*

P-45 *This poster was not presented*

P-46 **TACKLING HIP FRACTURES AND POLYPHARMACY: INNOVATIVE STRATEGIES FOR BETTER OUTCOMES!**
Sherif Zidan, Bekim Haxhiaj, Backer Afnan, Mustafa Mouhsen, Abdelaziz Elsalmawy

P-47 **DEVELOPING AND IMPLEMENTING A FRAGILITY FRACTURE CARE PATHWAY: AN ADVANCED NURSE PRACTITIONER'S APPROACH**
Leena Rodrigues

P-48 **CAN PROMPTS AFFECT THE READABILITY AND COMPREHENSIBILITY OF MEDICAL INFORMATION ABOUT FRAGILITY FRACTURE BY CHATGPT?**
Hakan Akkan, Gulce Kallem Seyyar

P-49 *This poster was not presented*

P-50 **FRAILTY AND DEMENTIA LIMIT REHABILITATION OUTCOMES AFTER HIP FRACTURE SURGERY: INSIGHTS FROM AN ORTHOGERIATRICS UNIT**
Paolo Mazzola, Giulia Caggiu, Matteo Monzio Compagnoni, Michela Passamonte, Patrizia Floris, Martina Manna, Francesco De Filippi

P-51 **ANALYSIS OF OPERATED ANKLE FRACTURES IN ELDERLY PATIENTS: ARE THEY ALL OSTEOPOROTIC?**
Giuseppe Rinonapoli, Carmelinda Ruggiero, Emilio Martini, Gabriele Tucci, Carlo Lauro Maria Trevisan, Antonella Barone

P-52 **CORRELATION OF ALBUMIN LEVELS WITH GLYCEMIC STATUS OF HIP FRACTURED ELDERLY PATIENTS**
Ioannis Papaionnou, Georgia Pantazidou, Thomas Repantis, Andreas Baikousis

P-53 **BLOOD PRESSURE IN ELDERLY WITH FRACTURE NECK OF FEMUR: AN ATTEMPT TO UNDERSTAND THE HIGH RATE OF FRACTURES**
Mohamed Eish , Abdulmalik Timamy, Eleanor Mae Davis, Rahma Thamer, Ali Asgar Hatim Ali, Eseoghene Elliot Akporiaye, Henry Owles , Maria Panourgia , Mohamed H. Ahmed

P-54 *This poster was not presented*

P-55 **ENHANCING ELDERLY FRACTURE RECOVERY: THE IMPACT OF COMPREHENSIVE ORTHOGERIATRIC ASSESSMENT PERIOPERATIVELY**
Mustafa Muhsen, Sherif Zidan, Sangeevan Sathianantharmoorthy, Harrison Houseago, Arpit Patel, Abdelaziz Elsalmawy

P-56 **IDENTIFICATION OF INSUFFICIENCY VERTEBRAL FRACTURES ON CT SCANS TO PREVENT FUTURE FRAGILITY FRACTURES**
Anita Rhodes, Ellinor Raby, Teresa Mossakowska

P-57 *This poster was not presented*

P-58 **ATYPICAL FRACTURES IN PATIENTS NON TREATED WITH BISPHOSPHONATES**
Giuseppe Rinonapoli, Lorenzo Lucchetta, Carmelinda Ruggiero, Andrea Giusti, Paolo Falaschi, Emilio Martini

P-59 **RESTORATION OF THE PROXIMAL FEMUR WITH AGN1 AS A BONE VOID-FILLER COMBINED WITH METAL-REMOVAL**
Christian Bernhard Frank, Adrian Stuetzle, Lies Desomer

P-60 **PROXIMAL ADJACENT SEGMENT DISEASE AFTER LONG SEGMENT POSTERIOR INSTRUMENTATION: INEVITABLE OR PREVENTABLE?**
Yiğit Kültür, Ahmet Hamdi Olçar, Hayrani Cem Karataşlı, Mahmut Görkem Gürçınar, Mehmet Nuri Erdem, Mehmet Tezer

P-61 *This poster was not presented*

P-62 **COMMUNITY GERIATRICIAN AND DEPRESCRIBING OF DIABETES AND HYPERTENSION MEDICATION IN PATIENTS WITH FRACTURE NECK OF FEMUR**
Abdulmalik Timamy, Mohamed Eish, Rahma Thamer, Henry Owles, Maria Panourgia , Mohamed H. Ahmed

P-63 *This poster was not presented*

P-64 **REHABILITATION SETTINGS AND TIMEFRAMES FOR PATIENTS WITH HIP FRACTURE AND COGNITIVE IMPAIRMENT IN DANISH MUNICIPALITIES**
Jan Arnholtz Overgaard, Søren T. Skou, Kristian Steen Frederiksen, Lauren Alison Beaupre, Morten Tange Kristensen

P-65 **POOR MEN'S NAVIGATION – RELIABLE AND SAFER ISG-ROD OSTEOSYNTHESIS WITH C-ARM DUE TO PREOPERATIVE NAVIGATION SIMULATION**
Sheip Panev, Michael Robert Klauser, Helmut Rasch, Christian Bernhard Frank

P-66 **THE EFFECT OF POSTOPERATIVE INTENSIVE CARE UNIT LENGTH OF STAY ON ONE-YEAR MORTALITY IN GERIATRIC HIP FRACTURES**
Batuhan Gencer, İhsan Özdamar, Turgut Dinçal, Aqshin Cabbarlı, Deniz Gülabi

P-67 **ANALYSIS OF THE PERFORMANCE OF ITALIAN TRAUMA CENTERS ON THE BASIS OF THE DATA OF P.N.E. (NATIONAL OUTCOME PROGRAMME)**
Giuseppe Rinonapoli, Carmelinda Ruggiero, Emilio Romanini, Gabriele Tucci, Paolo Falaschi, Fabio Monzani

P-68 **RESULTS OF LONG-TERM OBSERVATION OF PATIENTS WITH RHEUMATOID ARTHRITIS: EMPHASIS ON FRAGILITY FRACTURES**
Polina Kovalenko, Irina Dydykina, Alexander Smirnov

P-69 **HALLUX VALGUS IN THE OLDER AGE GROUP. DOES THE SURGICAL PROCEDURE CHANGE WITH INCREASING AGE-RELATED ADVANCED DEFORMITY?**
Ufuk Arzu, Batuhan Gencer, Serdar Satılmış Orhan, Yılmaz Kerem Akayoğlu, Deniz Gülabi

P-70 **HIP FRACTURES - LETS TALK ABOUT MEN**
Rachael Marie Doyle, Rachel Sullivan, Cliona Small, Shian Khan, Shane O'Hanlon , Marie Therese Cooney, Conor Hurson

P-71 *This poster was not presented*

P-72 **INTRA-RATER RELIABILITY OF A VERBAL RATING SCALE TO MEASURE POSTOPERATIVE FATIGUE AFTER HIP FRACTURE SURGERY**
Theresa Bieler, Inger Birgitte Bährentz, Signe Østergaard Zoffmann, Camilla Kampp Zilmer, Morten Tange Kristensen

P-73 *This poster was not presented*

P-74 **COMPREHENSIVE GERIATRIC ASSESSMENT TO UNDERSTAND THE CHARACTERISTICS AND CARE NEEDS OF OLDER ORTHOPEDIC SURGERY PATIENTS**
Meltem Koca, Fatma Nur Barlık, Beyza Çubukçu, Hüseyin Bilgehan Çevik, Sema Cihan, Osman Yağız Atlı, Osman Burak Keçelioğlu, Evrim Duman, Gözde Şengül Ayçiçek

P-75 **DIABETES MEDICATION AND TIGHT CONTROL IN ELDERLY WITH FRACTURE NECK OF FEMUR: ATTEMPT TO EXPLAIN HIGH RATE OF FRACTURES**
Rahma Thamer, Mohamed Eish, Abdulmalik Timamy, Henry Owles , Maria Panourgia, Mohamed H Ahmed

P-76 *This poster was not presented*

P-77 **RELATIONSHIP BETWEEN INTERTROCANTERIC FEMUR FRACTURE AND DEGENERATIVE SCOLIOSIS**
Yiğit Önaloğlu

P-78 **MISDIAGNOSED GROIN PAIN IN AN ELDERLY - INTERDISCIPLINARY NETWORK AS A TOOL FOR COST-EFFECTIVE WORK-COLLABORATION**
Oskar Kwaczynski, Andrej Maria Nowakowski, Massimo Ruffo, Christian Bernhard Frank

P-79 **DOES PTH LEVELS DIFFER IN DIABETIC AND NON-DIABETIC ELDERY HIP FRACTURED PATIENTS?**
Ioannis Papaionnou, Georgia Pantazidou, Thomas Repantis, Andreas Baikousis

P-80 *This poster was not presented*

P-81 **ADULT PATIENTS' EXPERIENCES ON CLOSED REDUCTION TREATMENT OF DISTAL RADIUS FRACTURE IN THE ED – AN INTERVIEW STUDY**
Charlotte Abrahamsen, Christina Østervang, Bjarke Viberg, Charlotte Myhre Jensen

ABSTRACTS

Free papers and posters that were not presented at the congress were not included in the abstract book.

FREE PAPERS

FP – 1

THE PILOT IMPLEMENTATION OF THE GREEK NATIONAL FRAGILITY HIP FRACTURE REGISTRY BASED ON THE MINIMUM COMMON DATA SET

Efthymios Iliopoulos[1], Theodoros Tosounidis[2], Reichan Molla Mustafa[1], Fotios Tilkidis[3], Ioannis Daskalakis[2], Dimitra Melissaridou[4], Dimitrios Serenidis[4], Vasileios Giannatos[5], Maria Sentona[6], Dimitrios Grammatikopoulos[7], Ioannis Gkiatas[3], Irini Tatani[5], Christianna Zidrou[6], Olga Savvidou[4], Michael Potoupnis[7], Georgios Drosos[1]

1 Metabolic Disease and Fragility Fractures Unit, Academic Orthopaedic Department, University Hospital of Alexandroupolis, Democritus University of Thrace
2 Academic Orthopaedic Department of University Hospital of Heraklion, University of Crete
3 Academic Orthopaedic Department of General University Hospital of Ioannina, University of Ioannina
4 1st Academic Orthopaedic Department, 'Attikon' General University Hospital, National and Kapodistrian University of Athens
5 Academic Orthopaedic Department, Patras General University Hospital, University of Patras
6 2nd Orthopaedic Department, 'Papageorgiou' General Hospital of Thessaloniki
7 3rd Academic Orthopaedic Department, 'Papageorgiou' General Hospital of Thessaloniki, Aristotle University of Thessaloniki

Background

Hip fragility fractures with their increasing incidence pose a great challenge to the health care professionals and raise a significant burden on national health care systems around the globe. The fragility hip fracture registries have been used in many countries in order to document the current situation and also identify any weaknesses of the local health care systems. This study aims to present the results of the pilot implementation of the first national fragility hip fracture registry in Greece, by the FFN Gr.

Materials & Methods

Seven different Orthopaedic Departments from six different hospitals nationwide participated in the present pilot study. All hip fragility fractures from September 2022 until December 2023, were prospectively collected and documented using a central database. For this purpose, the 21 points of Minimum Common Data Set, proposed by the FFN Global, with the addition of the 30-day mortality.

Results

A total of 1041 patients with a fragility hip fracture admitted in the involved orthopaedic departments were included in the study. The majority of the patients were female (70,9%) at a mean age of 81.18±10.3 years. One quarter of the patients (24.9%) had known dementia at the time of admission. Most of the patients had peri-trochanteric hip fractures (60%), while less frequent were the intracapsular hip fractures.

Most of the patients were treated surgically (96%), with mean ASA grade 2.56±0.86. The surgical intervention was performed within the first 36 hours in only 31% of the cases, mostly under spinal anaesthesia (74.1%), while the rest under general anaesthesia. Most of the extracapsular fractures were treated by using an intramedullary nail (86.6%) and most of the patients with intracapsular fracture were treated with hip hemiarthroplasty (77%).

The mean in-hospital length of stay was 10.8±8.5 days, with 12% developing a new pressure ulcer during hospitalisation. Only 48% of the patients managed to mobilise the first post-operative day. The in-hospital mortality was 3.8%, while the 30-day mortality reached 7.5%.

Multivariant and neural network analysis revealed that increased age and ASA grade as well as male gender negatively affect the 30-day mortality of these patients, while the prompt surgical intervention is the only factor that influence the length of in-hospital stay.

Conclusions

The use of a national hip fracture registry has been proven a valuable tool in the evaluation and improvement of national health care services across the globe. The present pilot study proves that the establishment of a national fragility hip fracture registry in Greece is feasible and demonstrates that the minimum common data set can be used as the base of any new registry. The first National Greek Fragility hip fracture registry revealed the local specifications of the Greek cohort, and provides important data for the improvement of the Greek healthcare system.

References

1. Johansen A, Ojeda-Thies C, Poacher AT, Hall AJ, Brent L, Ahern EC, et al. Developing a minimum common dataset for hip fracture audit to help countries set up national audits that can support international comparisons. Bone Joint J. 2022;104(6):721–8.

2. Johansen A, Hall AJ, Ojeda-Thies C, Poacher AT, Costa ML. Standardization of global hip fracture audit could facilitate learning, improve quality, and guide evidence-based practice. Bone Joint J. 2023;105-B(9):1013–9.

FP – 2

ARE THE NEW GENERATION PROXIMAL FEMORAL NAILS TRULY SUPERIOR IN THE TREATMENT OF INTERTROCHANTERIC FEMUR FRACTURES?

Goker Utku Deger[1], Ersin Taskın[2], Salih Candost Yetismis[3], Mahmut Kursat Özsahin[4], Huseyin Botanlıoglu[4], Ali Seker[4]

1 Beykoz State Hospital, Department of Orthopedics and Traumatology, Istanbul, Türkiye
2 Düzici State Hospital, Department of Orthopedics and Traumatology, Osmaniye, Türkiye
3 Familjelakarna Saltsjöbaden, Department of Family Medicine, Stockholm, Sweden
4 Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Orthopedics and Traumatology, Istanbul, Türkiye

Aim

In the treatment of intertrochanteric femur fractures, proximal femoral nails are frequently utilized. These nails are updated when deemed insufficient, with claims of addressing their shortcomings. Our objective is to compare the radiological and clinical outcomes of older generation nails with two traction screws to those of newer generation nails with a compression screw that locks into a traction screw.

Methods

Patients who underwent fixation with either the TRIGENä-TAN (an older generation system with two separate cephalomedullary traction screws) or the TRIGENä-INTERTANä (a newer generation system with one traction screw and a locking compression screw) antegrade intramedullary nail due to intertrochanteric femur fracture following acute trauma were analyzed. Patients with a minimum follow-up of six months, with complete AP/lateral hip radiographs at the last follow-up and recorded preoperative and postoperative Barthel scores were included in the study. A retrospective comparison was made between 45 patients from a cohort of 100 treated with the older generation nail between 2006 and 2010, and 44 patients from a cohort of 197 treated with the newer generation nail between 2014 and 2019, who met the inclusion criteria.

The study assessed patient age, gender, side of the fracture, preoperative and postoperative hospitalization duration, radiological fracture type, reduction quality, postoperative and follow-up collodiaphyseal angle (CDA) measurements, comparison of these measurements with the CDA of the unaffected side, tip-apex distance (TAD) measurement, and complication development. Clinical status was compared using preoperative and postoperative Barthel Index scores.

Results

The average age of the patients was 72.4 years. 61.8% of the fractures were classified as unstable. Complications developed in 3 patients (7%) in the INTERTAN group and in 5 patients (11%) in the other group, with no statistical significance ($p=0.37$). Intergroup analysis revealed that the reduction in CDA postoperatively and at follow-up was significantly greater in the INTERTAN group ($p<0.05$). A greater reduction in CDA was observed in females, though this was not statistically significant ($p=0.15$). Barthel scores decreased postoperatively in both groups, with a significantly greater decline in the INTERTAN group ($p<0.05$). No correlation was found between the TAD and complications.

Conclusion

Although no significant differences were observed between the old and new generation nails, patients in the old generation nail group exhibited better functional outcomes. Complications in the old generation nail group were related to screw issues, whereas varus deformity and nonunion were observed in the new generation nail group. This suggests that each system has different mechanical advantages, consistent with the literature. The significant decrease in CDA during follow-up in female patients may be related to their bone quality.

References

1. Kaynak G, Ünlü MC, Güven MF, Erdal OA, Tok O, Botanlıoğlu H, Aydıngöz Ö. Intramedullary nail with integrated cephalocervical screws in the intertrochanteric fractures treatment: Position of screws in fracture stability. Ulus Travma Acil Cerrahi Derg. 2018 May;24(3):268-273.

2. Berger-Groch J, Rupprecht M, Schoepper S, Schroeder M, Rueger JM, Hoffmann M. Five-Year Outcome Analysis of Intertrochanteric Femur Fractures: A Prospective Randomized Trial Comparing a 2-Screw and a Single-Screw Cephalomedullary Nail. J Orthop Trauma. 2016 Sep;30(9):483-8

3. Hoffmann MF, Khoriaty JD, Sietsema DL, Jones CB. Outcome of intramedullary nailing treatment for intertrochanteric femoral fractures. J Orthop Surg Res. 2019 Nov 12;14(1):360.

4. John B, Sharma A, Mahajan A, Pandey R. Tip-apex distance and other predictors of outcome in cephalomedullary nailing of unstable trochanteric fractures. J Clin Orthop Trauma. 2019 Oct;10(Suppl 1):S88-S94.

5. Nherera L, Trueman P, Horner A, Watson T, Johnstone AJ. Comparison of a twin interlocking derotation and compression screw cephalomedullary nail (InterTAN) with a single screw derotation cephalomedullary nail (proximal femoral nail antirotation): a systematic review and meta-analysis for intertrochanteric fractures. J Orthop Surg Res. 2018 Mar 2;13(1):46.

FP – 3

SHOULD WE ASK PATIENTS TO MAKE DO NOT ATTEMPT CARDIO-PULMONARY RESUSCITATION DECISIONS BEFORE HIP FRACTURE SURGERY?

Ioan Llwyd Hughes[1], Amelia Collings[2], Kang Tan[2], Antony Johansen[2]

1 Department of Trauma and Orthopaedic Surgery, University Hospital Wales
2 Department of Orthogeriatrics, University Hospital Wales

Aims

It is vital that patients are supported to make decisions about their own care, but junior orthopaedic doctors often find it challenging to raise questions of Cardio-Pulmonary Resuscitation (CPR) when preparing patients for surgery.

Effective decision making requires understanding of the risks of events during surgery, and of the implications of CPR. Otherwise there is a risk that patients may be unnecessarily alarmed by the topic and this can lead to patients or their families refusing surgery.

Methods

A clinical scenario of 'An 83 year old with a history of ischaemic heart disease and cognitive impairment presents with a hip fracture. While she is undergoing hemiarthroplasty under spinal anaesthesia you find a DNACPR decision recorded in her notes'.

We questioned whether being made aware of this prior DNACPR decision would affect anaesthetists' management of a range of intraoperative clinical complications.

Results

74 respondents from across the UK completed an anonymous Google forms survey. Nearly all (99%) were consultant anaesthetists, with just one person stating 'other' as grade.

27 respondents (37%) stated that earlier knowledge of this form would have altered their preparedness to anaesthetise her.

Despite the prior DNACPR decision nearly all respondents stated that they would still attempt electrical cardioversion if her BP falls dramatically as a result of ventricular tachycardia (91%) or ventricular fibrillation (88%) during surgery.

However, only 49% would initiate chest compressions if she failed to respond, and only 2 (3%) would continue CPR if this meant intubation or made intensive care admission likely.

Conclusion

The pattern of clinical practice defined by this survey highlights the challenges surrounding a peri-operative DNACPR decision, and a growing body of literature supports temporarily suspending a DNACPR decision during the perioperative period. It is clear that anaesthetists' knowledge of a previous DNA CPR decision allows them to modify their approach to resuscitation in response to an intraoperative event, and pre-operative discussion of such decisions is obviously a helpful element of pre-operative assessment.

In contrast, it is less relevant to ask patients to make a new decision, since the majority of senior anaesthetists would still start CPR if a treatable event arose during the operation. Starting discussion of DNA CPR may be an inappropriate additional stress in the pre-operative period. Instead we recommend that hip fracture teams open conversations by saying "it is not likely to be relevant, but do you have strong views about resuscitation?" and just allow discussions to develop from the patient's response.

FP – 4

PLASMA CALPROTECTIN COMPARED TO CONVENTIONAL INFECTION BIOMARKERS IN HIP FRACTURE PATIENTS – A PROSPECTIVE COHORT STUDY

Helmi-Sisko Pyrhönen[1,2], Alicia Persson[2], Johan Tham[2,3], Anna Stefansdottir[2,4], Linnea Malmgren[2,5], Cecilia Rogmark[1,2]

1 Department of Orthopedics, Skåne University Hospital, Malmö, Sweden
2 Lund University, Lund, Sweden
3 Department of Infectious Diseases, Skåne University Hospital, Malmö, Sweden
4 Department of Orthopedics, Skåne University Hospital, Lund, Sweden
5 Department of Geriatric Medicine, Skåne University Hospital, Malmö, Sweden

Aim

To assess the diagnostic performance of plasma calprotectin as infection biomarker compared to conventional markers following hip fracture surgery.

Methods

In this prospective cohort study, data from hip fracture patients admitted to our orthopedic department from March 23, 2023, to March 5, 2024, were analyzed. Plasma levels of calprotectin (reference interval in healthy individuals < 1.69 mg/L), procalcitonin (PCT, < 0.05 µg/L), C-reactive protein (CRP, < 5.0 mg/L), and white blood cell (WBC, 3.5 – 8.8 x 109/L) count were measured on the 3rd day post-surgery. The primary outcome was infection (pneumonia, urinary tract infections (UTIs), sepsis, surgical site infections, and other infections) within 30 days from admission, and the secondary outcome within 7 days.

The area under the curve (AUC) and its corresponding 95% confidence intervals were analyzed in a receiver operating characteristic analysis. The Youden index determined optimal cut-off values for sensitivity, specificity, negative predictive value (NPV) and positive predictive value (PPV).

Results

Out of 503 eligible patients, all biomarkers were measured in 100 patients (mean age 83 years, 61% women). Within 30 days, 16 patients developed infections (9 UTIs, 5 pneumonia, 1 sepsis, 1 unknown focus), compared to 7 patients within 7 days (4 UTIs, 2 pneumonia, 1 sepsis). In the infection group, internal fixation (88% vs 60%), chemotherapy (6% vs 2%), and corticosteroid use (19% vs 7%) were more common.

The infection group had significantly higher levels of calprotectin (3.9 [3.24 – 6.14] vs 3.2 [2.2 – 4.2], p=0.026) and WBC count (11.5 [9.6 – 12.5] vs 8.5 [7.0 – 9.9], p=0.002), but not CRP (126 [77 – 215) vs 117 [66 – 204], p=0.7) or PCT (0.25 [0.11 – 0.32] vs 0.22 [0.14 – 0.41], p=0.7).

WBC count showed the highest performance with an AUC of 0.75 (95% CI 0.60 – 0.90), followed by calprotectin with an AUC of 0.68 (0.53 – 0.83). AUC values for CRP and PCT were 0.53 (0.32 - 0.63) and 0.47 (0.32 - 0.63), respectively. WBC count had a sensitivity of 75% and specificity of 76% (NPV 94%, PPV 38%) at cut-off 10.1. Calprotectin had sensitivity of 69% and specificity of 62% at a cut-off 3.58 (NPV 90%, PPV 24%).

For infections within 7 days, WBC count had an AUC of 0.85 (0.73 – 0.97) and calprotectin 0.77 (0.57 – 0.98), while CRP and PCT did not perform better than chance (0.47 [0.19 – 0.75] and 0.63 [0.41 – 0.85]). WBC count had a sensitivity 100% and specificity 61% (NPV 100%, PPV 16%) at a cut-off 9.1, while calprotectin had a sensitivity of 86% and specificity of 63% at a cut-off 3.68 (NPV 98%, PPV 15%).

Conclusions

In this pilot study, plasma calprotectin showed superior diagnostic accuracy compared to CRP or PCT, but not compared to WBC count. Both calprotectin and WBC count could be used to rule out infections, especially in the short-term, while further clinical assessments are needed to confirm infections. PCT and CRP were not better than chance.

FP – 5

THE NEW MOBILITY SCORE HAS STRONGER PREDICTIVE VALUE TO THE ONE YEAR MORTALITY OF FRAGILITY HIP FRACTURE

Reichan Molla Moustafa, Efthymios Iliopoulos, Ioannis Kougioumtzis, Stylianos Tottas, Athanasios Ververidis, Konstantinos Tilkeridis, Georgios Drosos

Metabolic Diseases and Fragility Fractures Unit, Democritus University of Thrace, University General Hospital of Alexandroupolis, Greece

Introduction

The aging population presents a significant challenge for healthcare providers, with fragility fractures affecting individuals over 65 years old. These fractures frequently lead to complications, resulting in high rates of mortality, morbidity, and loss of independence. Despite numerous tests for predicting mortality, the optimal clinical assessment tool for fragility fractures remains undefined.

Objectives

This study aims to determine the most effective, quick, and reliable clinical assessment tool to identify high-risk patients with increased mortality and morbidity rates in this population.

Materials and Methods

The study included all patients admitted to our hospital with fragility neck of femur fractures from July 2017 to June 2023. Data were collected prospectively for the local registry and analyzed retrospectively. Collected data included demographic information and several scales: mental state (Abbreviated Mental Test Score, AMTS), mobility state (New Mobility Score, NMS), physical condition preoperatively (American Society of Anesthesiologists, ASA), comorbidity assessment (Charlson Index), mortality risk (Nottingham Hip Fracture Score, NHFS), and survival (Sernbo score). The 30-day mortality rate was also recorded. Patients with incomplete data were excluded.

Results

A total of 380 patients were initially included, with 356 patients (average age 81.73±9.24 years) remaining after exclusions. The cohort was predominantly female (71%), with a mean BMI of 26.66±4.91. The mean ASA grade was 2.36±0.6. Preoperatively, the mean NMS was 5.77±2.6, Charlson Score was 4.17±2.3, NHFS was 5±1.2, and Sernbo score was 15.23±3.8. The 30-day mortality rate was 9.5%, and the 1-year mortality rate was 28.8%.

Monovariant analysis indicated that gender significantly influenced 30-day mortality (p=0.05), while age, Body Mass Index(BMI), AMTS, ASA grade, NMS, Charlson Index, NHFS, and Sernbo score did not (p=0.12, 0.41, 0.42, 0.98, 0.43, 0.94, 0.21, and 0.75, respectively). One-year mortality was significantly related to AMTS, NMS, and NHFS (p=0.03, 0.003, 0.017, respectively), but not to gender, age, BMI, ASA grade, Charlson Index, and Sernbo score (p=0.06, 0.63, 0.16, 0.57, 0.82, and 0.07, respectively).

In the multivariable model, no variables retained unique significance for 30-day mortality. For 1-year mortality, only the New Mobility Score retained its significance as an independent predictive factor (p=0.024).

Conclusion

Multivariable analysis revealed that the New Mobility Score is the only independent predictive risk factor for 1-year mortality after a fragility hip fracture. Despite its usefulness, the Sernbo score does not predict 30-day or 1-year mortality in these patients.

References

1. C. Cooper, G. Campion, and L. J. Melton, “Hip fractures in the elderly: A world-wide projection,” Osteoporosis International, vol. 2, no. 6, pp. 285–289, Nov. 1992.

2. T. C. Marufu, A. Mannings, and I. K. Moppett, “Risk scoring models for predicting peri-operative morbidity and mortality in people with fragility hip fractures: Qualitative systematic review,” Injury, vol. 46, no. 12, pp. 2325–2334, Dec. 2015.

FP – 6

USE OF EXTERNAL FIXATORS IN GERIATRIC FRACTURES: HOW SHOULD PIN REMOVAL BE FOLLOWING UNION?

Bedrettin Akar[1], Fatih Ugur[2]

1 Sakarya Yenikent State Hospital.Sakarya, Türkiye
2 Kastamonu University, Faculty of Medicine, Kastamonu, Türkiye

Aims

This study aimed to investigate the effect of single versus staged removal of pins from an external fixation system on the incidence of complications in geriatric patients with intertrochanteric fractures (ITF) and high anesthesia risk (American Society of Anesthesiologists[ASA] Class IV).

Methods

Between 2016 and 2020, 83 patients with ITF and high anesthesia risk (ASA IV) were treated at our clinic using a closed reduction technique and a 135-degree multiaxial external fixator. Four self-tapping 6-mm Schanz screws were utilized proximally in the femoral neck and three distally, ensuring that the screws did not penetrate beyond 1 cm from the cartilaginous surface. The fractures were classified according to the modified Evans (Kyle) method. Patients with type I and II stable fractures were included in the study, while those with type III and IV unstable fractures, those undergoing oncological treatment, multi-trauma patients, and those with developmental hip dysplasia were excluded. A total of 76 patients met the inclusion criteria. The patients were divided into two groups: Group 1 (n = 42) underwent single-session pin removal following union, while Group 2 (n = 34) had pins removed in two stages at three-week intervals. Pin removal was performed under local anesthesia (lidocaine) in an operating room, and the patients were discharged on the same day. Radiographic evaluations were undertaken at four, eight, and 12 weeks after pin removal to assess complications such as iatrogenic refracture, nonunion, and varus deformity.

Results

No statistically significant difference was observed between Groups 1 and 2 regarding the distribution of nonunion or varus deformity ($p > 0.05$). However, the incidence of iatrogenic refractures was significantly higher in Group 1 compared to Group 2 ($p = 0.031$). Logistic regression analysis revealed that the risk of iatrogenic refracture in Group 1 was 7.77 times higher than in Group 2 (95% confidence interval: 1.92–15.56).

Conclusions

The use of closed external fixation for ITF in geriatric patients with high anesthesia risk (ASA IV) offers advantages such as reduced bleeding and a shorter operation time. Single-session removal of pins following union can create a medullary cavity along the pin tract, potentially leading to iatrogenic refractures or femoral neck fractures during mobilization. Staged removal of pins may reduce the size of the medullary cavity, thereby preventing iatrogenic fractures in the proximal femur.

References

1. Yousry AH, Chotai PN, El Ghazaly SA, Fayyad TA, Abdelgawad AA.Outcomes of trochanteric external fixation for geriatric inter-trochanteric hip fractures. J Orthop. 2015;12(4):174-178.

2. Boghdady GW, Shalaby M. Safety and reliability of external Fixation for basicervical and intertrochanteric fractures in high-risk elderly patients.Strat Traum Limb Recon. 2007:2:83–9.

3. Yeganeh A, Taghavi R, Moghtadaei M. Comparing the Intramedullary Nailing Method Versus Dynamic Hip Screw in Treatment of Unstable Intertrochanteric Fractures. Medical Archives, 2016;70(1):53.

4. Pathania V, Balakrishnan M, Khare R. External fixation of intertrochanteric fractures of femur in elderly. Medical Journal Armed Forces India.1999;55(4):325–7.

5. Arslan A, Utkan A, Koca TT. Result of a compression pin along with trochanteric external fixation in management og high risk elderly intertrochanteric fractures. Indian J Orthop. 2016;50 (6):636-40.

6. Karn NK, Singh GK, Kumar P, Singh MP, Shrestha BP, Chaudhary P. Management of trochanteric fractures of the femur with external fixation in high-risk patients. International Orthopaedics. 2008:33(3);785-8.

7. Petsatodis G, Maliogas G, Karikis J, Christodoulou AG, VenetsanakisG, Sachinis N, et al. External Fixation for Stable and Unstable Intertrochanteric Fractures in Patients Older Than 75 Years of Age: A Prospective Comparative Study. Journal of Orthopaedic Trauma. 2011;25(4);218-23.

FP – 7

IDENTIFYING RISK FACTORS FOR DELIRIUM IN PATIENTS WITH HIP FRACTURE AS PREDICTOR OF WORSE OUTCOME

Elena Bianchi[1], Sara Rogani[1], Giulia Pescatore[1], Alessia Maria Calabrese[1], Filippo Niccolai[1], Ludovica Di Carlo[1], Francesca Carmassi[1], Elena Carlino[1], Valeria Calsolaro[1], Michelangelo Scaglione[1], Fabio Monzani[1], Agostino Virdis[1]

1 Pisa University Hospital, Geriatrics Unit
2 Pisa University Hospital, Department of Orthopedics and Traumatology

Aim

Early identification of patients at high risk of delirium among hospitalized older patient for acute events is crucial for its prevention. Our study aims at evaluating the different impact of risk factors in delirium onset in elderly patients hospitalized for hip fracture. Secondary aim was to evaluate the influence of delirium on functional and cognitive outcome.

Methods

In this retrospective observational case-control study, patients admitted to Traumatology ward between September 2020 and June 2023 for hip fracture and aged over 65 years were included in the Orthogeriatric care. A trained geriatrician conducted Comprehensive Geriatric Assessment, full medical and pharmacological history, daily monitoring of blood tests and vitals and managing of possible complications, with particular attention to delirium onset. We performed a three-month follow-up to evaluate outcomes and we checked 6 months mortality.

Results

Out of 147 patients (110 females and 37 males), 80 patients developed delirium while 67 were part of the control group. Delirious patients were older (86.9 ± 5.9 vs 83.1 ± 7.4, $p < 0.001$), with lower ability in the IADL (2.45 ±2.7 vs 4.31 ±3.2, $p < 0.001$), frailer according to CFS (5.33 ±1.7 vs 4.36 ±2 p 0.002) and with worse cognitive performance as assessed by SPMSQ (5.63 +/- 3.68 vs 2.13 +/- 2.5, $p < 0.01$). Not substantial differences in the BADL between the two groups emerged. We evaluated the pre-existence of the most important pathologies: atrial fibrillation, diabetes mellitus, chronic obstructive pulmonary disease, dyslipidemia, chronic kidney disease, encephalopathy, dementia, psychiatric diseases, in particular BDPS, dysphagia, resting syndrome to bed. and previous fractures. Patients who developed delirium had significant higher prevalence for previous stroke (75% vs 25%, $p = 0.04$) and known cognitive impairment (69.7% vs 38.1% $p = 0.03$). At three month follow up we observed a significant worsening on all the functional and cognitive domains, and a trend to worse motor recovery compared to non-delirious patients. A high six-month mortality rate was observed in the court with thirty-four deaths (23.1%), significantly higher in the group of delirious patients ($p=0.008$).

Conclusion

Risk factors for delirium include older age, greater frailty and comorbidities, and worse cognitive impairment. These factors should be carefully targeted, to identify subjects at greater risk of delirium and prevent and treat delirium itself.

FP – 8

MULTICENTER IMPLEMENTATION OF ORTHOGERIATRICS-FLS: AN EVIDENCE-BASED FRAMEWORK FOR DIGITAL HEALTH REGISTRY

Irewin A. Tabu, Bernardino B. Alpuerto II, Karla Teresa S. Araneta,Giorgio D. Delgado, Julius Bryan C. Abesamis

University of the Philippines - Manila, Department of Orthopedics, Philippine General Hospital

Fragility hip fractures in the elderly impose significant clinical and economic burdens. The combined Orthogeriatric Fragility Fracture Management and Fracture Liaison Service at the University of the Philippines - Philippine General Hospital was established in October 2017 to address these challenges. This multidisciplinary approach has demonstrated improved outcomes and cost-effectiveness, especially for lower-income patients. This prospective cohort study aims to: 1) describe clinical, treatment, and post-treatment characteristics of geriatric patients with fragility hip fractures; 2) measure outcomes such as quality of life, functional recovery, mortality, and complications; 3) identify significant factors associated with patient outcomes; and 4) create an electronic data collection framework for a sustainable national hip registry. Secondary objectives include developing orthogeriatric care models nationwide and identifying challenges in implementing the combined approach among hospitals.

The 24-month study, conducted from January 2022 to December 2023, involved 12 government hospitals. Patients aged 60 and above with hip fractures were included. Data were recorded via Redcap. Non-probability sampling enrolled all eligible subjects at each site until the target number was reached. Monitoring involved periodic site visits and remote data checks to ensure data accuracy. Descriptive statistics summarized baseline characteristics and treatment outcomes, with statistical significance set at $p < 0.05$.

The study included 1,011 patients, with a mean age of 72.67 years. Females had a higher prevalence of fractures (83.3%). The mean time from admission to surgery was 19.92 days. Primary reasons for not undergoing surgery were patient refusal (32.0%) and financial constraints (1.7%). Major reasons for surgical delays included patient indecision and lack of hospital resources. PHA was the most prevalent surgical intervention. In the immediate postoperative period, 45.1% of patients were unable to perform any bedside mobilization, while 40.6% could perform sitting mobilization. At 120 days post-treatment, 33.1% were freely mobile without aids, and 26.2% could move outdoors with one aid. At the most recent follow-up, 87.5% of patients were alive and without complications. Additionally, 52.1% had no problems performing usual tasks, and 49.0% reported no pain or discomfort. In terms of mental health, 68.6% of patients reported no anxiety or depression.

This is the first study to generate electronic data on hip fractures across multiple centers in the Philippines. The mean time from admission to surgery was 19.92 days, highlighting systemic healthcare access challenges that necessitate streamlined processes for timely medical attention. Barriers to surgery, such as patient refusal and financial constraints, underscore the need for improved patient education, support, and financial accessibility to optimize care pathways for hip fracture patients.

References

1. Reyes PVSJ, Tabu IA. Fragility Hip Fractures in a Team-Based Multidisciplinary Orthogeriatric Care Setting with a Fracture Liaison Service: Patient's Profile and Early Outcomes (8th Fragility Fracture Network Poster Presentation August 28-30 2019 Oxford University Oxford England)

2. Jahan F (2015) Osteoporosis: A Silent Killer. J Women's Health Care 4: 260.

3. Cortez KA, Lai JGL, Tabu IA. Economic burden and the effects of early vs. delayed hospitalization on the treatment cost of patients with acute fragility hip fractures under the UPM-PGH Orthogeriatric Multidisciplinary Fracture Management Model and Fracture Liaison Service. 2020. Philippine General Hospital.

4. Cooper C. and Ferrari S. (2019). IOF Compendium of Osteoporosis. 2nd edition. http://share.iofbonehealth.org/WOD/Compendium/2019-IOF-Compendium-of-Osteoporosis-PRESS.pdf

5. Tarantino ,U., Capone, A., Planta, M. et al. The incidence of hip, forearm, humeral, ankle, and vertebral fragility fractures in Italy: results from a 3 year multicenter study. Arthritis Res Ther 12, R226 (2010).

FP – 9

POSTOPERATIVE INTENSIVE CARE UNIT PREPARATION FOR GERIATRIC HIP FRACTURE PATIENTS: IS IT A MUST?

Batuhan Gencer, İhsan Özdamar, Serdar Satılmış Orhan, Aqshin Cabbarlı, Deniz Gülabi

Marmara University, Department of Orthopaedics and Traumatology

Introduction

Hip fractures are the leading orthopedic geriatric problem. One of the biggest problems in the management of geriatric hip fractures is the need for a postoperative (PO) intensive care unit (ICU). In geriatric patients, PO ICU preparation is recommended before the surgery, and patients cannot be taken into surgery without confirming ICU preparation except in absolute emergencies. According to the official data of the Ministry of Health, a total of 48,807 intensive care beds are available in Türkiye, 32,814 (67.2%) of which are for adult patients (1). Despite this, the need for intensive care due to the increasing population age and geriatric patient load remains an important limiting factor. On the other hand, patients who can tolerate the stress of surgery, do not develop perioperative complications and have acceptable general conditions and vital signs after awakening may be considered suitable for PO orthopedics ward follow-up.

Our study aimed to determine the postoperative intensive care unit admission rates of geriatric hip fractures for which intensive care unit preparation was requested preoperatively and the factors that may affect this situation.

Material Method

Between 2023 and 2024, all patients over 65 years of age with a diagnosis of hip fracture (femoral neck, intertrochanteric femur, subtrochanteric femur) who were treated and followed up in our clinic were included in the study regardless of the mechanism of injury and the treatment method applied. All patients (188 patients) for whom PO ICU preparation was requested in the preoperative evaluation form were included in the study. Demographic data, diagnoses, type of anesthesia, and postoperative follow-up unit of all patients were evaluated.

Results

Fifty-seven patients (30.3%) in whom ICU preparation was requested preoperatively were followed up in the ICU postoperatively, whereas the remaining patients were followed up in the orthopedics ward. There was no significant difference between the age, gender, and diagnosis of the patients who were followed up in the ward or ICU postoperatively. There was a considerable difference between the type of anesthesia and the postoperative follow-up unit ($p<0.001$) and 80.7% of the patients who were operated under general anesthesia were followed up in the intensive care unit.

Conclusion

Although physicians should consider the absolute well-being of their patients and be prepared for every possible scenario, efficient use of resources is also an important parameter. In our study, the postoperative intensive care follow-up rate in geriatric hip fractures was calculated as 30.3%. This rate was much higher (80.7%) in patients who were operated under general anesthesia. In preoperative preparation, it should be kept in mind that increased waiting times due to the need for intensive care units may result in increased mortality, especially after 72 hours.

Reference

1. T.C. Sağlık Bakanlığı Sağlık İstatistikleri Yıllığı. Site: https://www.saglik.gov.tr/TR,84930/saglik-istatistikleri-yilliklari.html. Date: 05.06.2024

FP – 10

TIME TO MOBILIZATION IN HOURS AFTER SURGERY FOR HIP FRACTURE AND 30-DAY MORTALITY – A 6-YEAR NATIONWIDE REGISTER STUDY

Morten Tange Kristensen[1], Ina Trolle Andersen[2], Bjarke Viberg[3], Alma Becic Pedersen[2]

1 Department of Physical and Occupational Therapy, Copenhagen University Hospital, Bispebjerg and Frederiksberg; Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark
2 Department of Clinical Epidemiology, Aarhus University Hospital; Department of Clinical Medicine, Aarhus University, Aarhus, Denmark
3 Department of Orthopaedic Surgery and Traumatology, Odense University Hospital, Odense, Denmark.

Aims

Mobilisation within the first postoperative day after surgery is recommended for reducing 30-day mortality. However, no data are available on time in hours for mobilisation and hip fracture outcome. We examined whether the time in hours for mobilization within the first 36 hours after surgery for a hip fracture was associated with 30-day post-surgery mortality.

Methods

36,229 patients (67.3% women and 72% from own residence), 65 years or older undergoing surgery for a first-time hip fracture included in the Danish Multidisciplinary Hip Fracture Register from January 2016 through December 2021, were included. The Danish register monitors time in hours to mobilisation from start of surgery as one of their quality indicators and with the national standard fulfilled for patients mobilized within 24 hours. This was reached for 75% of patients. Exposure categories were time in hours to mobilisation (≤6, >6-12, >12-18, >18- 24, >24-30 and >36 hours) from start of surgery. Outcome was mortality within 2-30 days of surgery (0.7% died before day 2). Time for mobilisation was missing for 4,401 (12.1%) patients of whom 16.3% died within 30 days. We calculated risks, risk differences (RD) and hazard ratios (HR) with 95%CIs using inverse probability of treatment weighted method to account for confounding; age, sex, surgery year, fracture type, time to surgery, residential status, BMI, pre-fracture mobility (Cumulated Ambulation Score) and comorbidities.

Results

30-day mortality risk for those mobilized ≤6 (n=1,503), >6-12 (n=4,509), >12-18 (n=8,351), >18-24 (n=12,730), >24-30 (n=2,636) >30-36 (n=254) and >36 (n=1,764) hours from start of surgery were respectively 5.18% (4.13,6.39), 5.27% (4.65,5.94), 7.87% (7.30,8.46), 9.16% (8.66,9.67), 10.45% (9.32,11.66), 10.24% (6.89,14.34) and 15.83% (14.16,17.57). The RD and adjusted HR for 30-day mortality for those mobilized >24-36 versus ≤24 hours were respectively 1.63% (0.51,2.76) and 1.21 (1.07-1.37). Since notable number of patients were mobilized between 18-24 hours, to check robustness of importance of early mobilization for mortality we calculated adjusted RD and HR for patients mobilized between 24-36 hours compared with patients mobilized ≤18 hours (RD was 2.26% [1.12, 3.40] and HR was 1.33 [1.16,1.52] for 30-day mortality).

Conclusions

The risk of 30-day mortality increases with the increasing time in hours to mobilisation after surgery for a first-time hip fracture. Thus, we should aim for early mobilisation as soon as possible, not as before or after 24 hours post-surgery, for all patients with hip fracture.

FP – 11

EARLY OCCUPATIONAL THERAPY AND INTEGRATED PHYSIOTHERAPY APPROACHES IMPROVE OUTCOMES AFTER HIP FRACTURE SURGERY

Melissa Taylor

James Paget University Hospital NHS Foundation Trust

Background

Effective rehabilitation requires expertise in performing activities of daily living, goal setting and adaption. By maximising functional independence, occupational therapists (OTs) have a key role in reducing length of stay (LOS) in hospital (RCOT 2016). OT assessment within 72 hours after hip fracture has been continually recommended in Scotland (SIGN, 2009) but not consistently adopted or audited in England and Wales. The Physiotherapy Hip Fracture Sprint Audit in 2017 showed a wide variation in acute rehabilitation provision across the country with James Paget University Hospitals NHS Foundation Trust performing below the national average, with average LOS 18.2 days.

A service development project was initially devised by both OT and physiotherapy in 2019 but re-launched in 2021 to improve patient outcomes.

Method

OTs aimed to complete a comprehensive assessment of all patients admitted from their own residence within 72 hours post-surgery. Additionally, a “decision-point” was introduced approximately day 7 post-surgery– a goal-focussed patient assessment with an OT and a physiotherapist which evaluated patient progress, goals and discharge plan and was shared with the multi-disciplinary team using electronic ‘wardboard’ and therapists defined a clear clinical criteria for discharge.

Results

The first OT patient contact in August 2017 was on average day 11.6 post-operatively and the average LOS was 18.2 days. No patients received OT assessment within 72 hours post-surgery. Data collected from a HipSprint Audit from April-June 2022 showed 63% of eligible patients (n=90) received assessment within 72 hours, which increased to 100% on re-audit in April to August 2023 (n=111). Improvements were also reflected in the average number of minutes of rehabilitation patients received in the first week after surgery from 100.9 in 2022 to 130 in 2023. In 2023, acute LOS was 15.2 days.

Conclusion

Earlier OT assessment, introduction of a therapy led ‘decision-point’ at day 7 post operation and setting Clinical Criteria for Discharge (CCD) improved rehabilitation provision, reduced LOS, promoted patient independence and reduced hospital LOS.

Relevance

Acute orthopaedic therapy teams should consider implementing early occupational therapy input and adopting an integrated approach to rehabilitation for hip fracture care.

References

1. Royal College of Occupational Therapy, 2016. College of Occupational Therapists – Reducing the pressure on hospitals: a report on the value of occupational therapy in England. [ebook] London: COT. Available at: [Accessed 27 May 2024]

2. Royal College of Physicians. Recovering after a hip fracture: helping people understand Physiotherapy in the NHS. Physiotherapy ‘Hipsprint’ audit report 2017. London RCP; 2018.

3. Scottish Intercollegiate Guidelines Network . Edinburgh, Scotland: Scottish Intercollegiate Guidelines Network; 2009. Management of hip fracture in older people: a national clinical guideline [Internet] Available from: https://pdf4pro.com/cdn/part-of-nhs-quality-improvement-scotland-2531e4.pdf. [Accessed 27 May 2024]

FP – 12

ASSOCIATION BETWEEN EARLY MOBILIZATION AFTER HIP FRACTURE SURGERY AND RISK OF CHRONIC OPIOID USE WITHIN 1 YEAR

Yasmina Maria Tudorache[1], Ina Trolle Andersen[1], Morten Tange Kristensen[2], Alma Becic Pedersen[1]

1 Department of Clinical Epidemiology, Aarhus University Hospital and Department of Clinical Medicine, Aarhus University, Denmark
2 Department of Physical and Occupational Therapy, Copenhagen University Hospital, Bispebjerg and Frederiksberg and Department of Department of Clinical Medicine, University of Copenhagen, Denmark

Aims

Early mobilization after hip fracture (HF) surgery has been shown to be associated with lower risk of postoperative complications, faster recovery, and lower mortality, all of which translate into overall better patient outcome. Strong post-operative pain can be an obstacle in achieving early mobilization and regaining pre-fracture functional level. Opioids are standard treatment for pain management, but treatment can be challenging since HF patients are more prone to opioid side effects. Literature shows that about 20% of HF patients who were not using opioids before HF are using opioids 1 year after surgery. We aim to examine the association between early mobilization and the risk of chronic opioid use (COU) within 1-year after HF surgery.

Methods

Using Danish population-based registries we included patients aged 65 who underwent surgery for a first time HF between 2016 and 2021 (n=36.229). COU was defined as ≥2 prescriptions between 31-365 days of surgery. We calculated crude risk of COU by time of mobilization after surgery (<24h, 24-36h, and >36h or missing) using the Aalen-Johansen estimator, taking death into consideration. Using stabilized inverse probability of treatment (sIPT) weighing, we calculated risk differences with 95% confidence intervals (CI 95%) balancing mobilization groups on confounders such as age, gender, comorbidity, surgery year, surgery delay, fracture type, body mass index, cohabitation status, and pre-fracture mobility.

Results

Patients mobilized 24-36h after surgery had crude risk of COU of 33.7%, whereas patients mobilized <24h had risk of COU of 29.9%. Group of patients mobilized 24-36h had lower prevalence of those living in own home, having normal body mass index and good pre-fracture mobility, they were more comorbid, and had higher pre-fracture opioid use. Patients mobilized >36h or had missing data on time of mobilization had slightly poorer health than patients mobilized within 24-36h. After sIPT weighting, mobilization groups were well balanced on confounders. Based on sIPT weighting, patients mobilized 24-36h after surgery had 3.5%-points (CI: 1.6-5.3) higher risk of COU compared with patients mobilized <24h.

Conclusions

Early mobilization within 24 hours of HF surgery is significantly associated with reduced risk of COU within 1 year of HF surgery compared to later mobilization. The mechanisms through which early mobilization reduces the risk of COU could be by improving physical functioning and recovery, pain severity, and mental health, and by reducing postoperative complications, all contributing to less pain overall. Our study emphases the importance of pain treatment programs to achieve early mobilization, but also the importance of continuously evaluating changes in pain and physical functioning after discharge, and education of patients and their families about early symptoms of opioid addiction and side effect.

FP – 13

PATIENT EDUCATION POST VERTEBRAL FRAGILITY FRACTURE: A SCOPING REVIEW

Caitriona Gabrielle Cunningham[1], Jane Duffy[1], Ellie May Heatley[1], Katie Hogan[1], Fiona Kilkenny[1], Padhraic Linehan[1], Diarmuid Stokes[1], Karen Barker[2]

1 School of Public Health, Physiotherapy and Sports Science, University College Dublin
2 Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS) at the University of Oxford.

Introduction

The incidence of Vertebral Fragility Fractures (VFF) is rising, associated with osteoporosis among an ageing global population. Most VFFs are managed conservatively with patient education a core element. This review aims to identify and synthesise the literature regarding healthcare professional-led patient education post VFF.

Methods

This review was registered on OSF (osf.io/bqz5k)1 ,conducted in accordance with the Joanna Briggs Institute methodology 2 for scoping reviews and guided by the Arksey and O'Malley Framework3, using five key stages; 1. identifying the research question, 2. identifying relevant studies, 3. study selection, 4. charting the data, and 5. charting, collecting and summarising the data. Six databases (Pubmed, ERIC, Embase, Cinahl, APA PsychINFO and Cochrane) were searched for papers published (in English) from January 2008 to November 2023, using a clearly defined search strategy. Predefined inclusion / exclusion criteria were used for screening papers using Covidence software and a minimum of two independent reviewers. Data were extracted from full-text articles which met the inclusion criteria, with narrative synthesis of findings. Reporting of results adhered to the PRISMA-Scoping review checklist.

Results

Title and abstract screening was conducted on the 7,177 retrieved studies. Of the 34 papers identified for full text review, 8 studies (from Canada, Norway, Sweden, China and the UK) met the scoping review inclusion criteria.These included four randomised controlled trials, one pilot RCT, one non randomised, controlled trial, one retrospective analysis of data from patients with fragility fractures and one pre-post intervention study design. Education providers were a mix of healthcare professionals, most commonly physiotherapists and primary care physicians. Education was delivered in a variety of settings using verbal, written, and visual communication media. The most common education topics were: exercise,osteoporosis, nutrition and falls management. A diversity of outcome measures captured patient knowledge, quality of life, falls efficacy, physical function, balance and pain.

Conclusion

Findings of this review demonstrate the limited evidence and an inconsistent approach to education post VFF in terms of education providers, topics, patient involvement, mode of delivery and outcome measures. Research is critically needed to inform development, and delivery of effective, evidence based education interventions for VFF management.

References

1. Cunningham, C. G. (2023, November 3). Education post Vertebral Fragility Fracture: A Scoping Review. Retrieved from osf.io/bqz5k

2. Peters M, Godfrey C, McInerney P, Munn Z, Tricco A, Khalil H. JBI Manual for Evidence Synthesis 2024 [Chapter 10]. Available from: https://synthesismanual.jbi.global.

3. Arksey H, O'Malley L. Scoping studies: towards a methodological framework. International Journal of Social Research Methodology. 2005;8(1):19-32.

4. Covidence Systematic Review Software [Internet]. Veritas Health Innovation, Melbourne, Australia 2024 [cited 2024 April 28] Available from: https://www.covidence.org/

5.Tricco, AC, Lillie, E, Zarin, W, O'Brien, KK, Colquhoun, H, Levac, D, Moher, D, Peters, MD, Horsley, T, Weeks, L, Hempel, S et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018,169(7):467-473.

FP – 14

EVALUATING INTRA-RATER RELIABILITY AND VALIDITY OF TELE-ASSESSMENT FOR PERFORMANCE BASED FUNCTIONAL TESTS IN ELDERLY

Sezen Karaborklu Argut, Yıldız Analay Akbaba, Derya Çelik

Istanbul University-Cerrahpaşa, Faculty of Health Science, Department of Physiotherapy and Rehabilitation

Aim and Background

With the increasing age of the global population, there is a growing need for effective and accessible methods to assess functional mobility and balance in elderly individuals. Performance-based measures, such as the Timed Up and Go (TUG) test and the 30 second Sit to Stand (30sSTS) test, have been widely utilized in clinical trials to evaluate these parameters. These tests are essential for identifying mobility impairments, assessing fall risk, and determining the overall functional status of older adults.

Traditionally, the TUG and 30sSTS tests are administered in clinical settings, requiring the physical presence of both the clinician and the patient. However, the advent of telemedicine offers an innovative approach to conducting these assessments remotely. Tele-assessment not only increases accessibility for individuals who may have difficulty traveling to healthcare facilities but also offers a solution for continuous monitoring in the comfort of their own homes.

This study aims to examine the intra-rater reliability and validity of tele-assessment versions of the TUG and 30sSTS tests in elderly persons.

Methods

This cross-sectional study recruited 86 elderly participants aged 65 and above from local community centers and outpatient clinics. Inclusion criteria included individuals capable of providing informed consent and those able to perform the TUG and 30sSTS tests independently. Exclusion criteria included severe cognitive impairment, acute illness, or any conditions that contraindicate physical activity. Participants underwent initial evaluation via tele-assessment. Subsequently, one hour later on the same day, the assessments were repeated in-person by the researchers to determine the validity of the tele-assessment method. To assess the intra-rater reliability of the tele-assessment, all tests were re-administered via tele-assessment one week later.

Results

The intraclass correlation coefficients for the TUG test and the 30sSTS test were 0.88 and 0.91, respectively, indicating high reliability. Moreover, the tele-assessment versions of these tests exhibited strong correlations with the face-to-face assessments ($r = 0.90$ for TUG and $r = 0.91$ for 30sSTS, $p < 0.001$).

Conclusion

TUG and 30sSTS tests, when administered via tele-assessment, demonstrated both validity and reliability in effectively measuring the functional mobility and balance of elderly individuals. The findings of this study endorse tele-assessment as a viable method for conducting remote physical evaluations, thereby offering a practical alternative for monitoring and assessing the physical capabilities of older adults in settings where in-person assessments may not be feasible.

FP – 15

ENHANCING REHABILITATION PATHWAYS FOR ORTHOPEDIC PATIENTS: A COLLABORATIVE APPROACH

Máire Gilmartin[1], Ruth Daly[1], Schira Farrell[1], Clodagh O'Dwyer[2], Sinead Reynolds[1], Conor Hurson[1], Rachael Doyle[1,2], Suzanne Noel[2], Niamh Vanderbergh[2]

1 St Vincents University Hospital, Elm Park, Dublin, Ireland
2 St Columcilles Hospital, Loughlinstown, Co Dublin, Ireland

Introduction

Offsite rehabilitation for older patients post-hip fracture offers significant benefits such as improved recovery, enhanced mobility, and better quality of life. These facilities provide specialized care, including physiotherapy, occupational therapy, and orthogeriatric input, and help acute hospitals free up beds.

Background

St. Vincent's University Hospital (SVUH) in Dublin provides hip fracture care to approx. 400 patients annually. St. Columcille's Hospital (SCH) provides rehabilitation for these patients. A quality improvement project (QIP) at SCH found that the patient flow to access orthopaedic rehabilitation at SCH was below capacity, indicating inefficiencies in referral process and bed utilization.

Aim

In Q3 2023, a cross-site collaboration aimed to understand the systems, and support initiatives to improve rehabilitation pathways. This collaboration has progressed through two phases: Phase 1 focused on observing current performance and Phase 2 working to improve timely transitions to SCH.

Phase 1:

Our methods to understand processes and performance included:

Stakeholder Meetings to discuss findings and gather input.

Process Review and Mapping to identify critical steps and potential bottlenecks.

Process Observation and Analysis of data to observe timelines and engaging with frontline staff for insights.

This phase resulted in a comprehensive process map. In Q1 2024, of 39 referrals to SCH, 33 were accepted, and 10 transferred for rehabilitation. The average time from referral to acceptance was 11 days, with a further 8 days required to transfer. 20 were discharged home or to other facilities while waiting transfer to SCH.

Analysis of process and data found the paper-based referral process to be a logistical barrier, leading to communication delays. SCH bed availability was a critical barrier, often making discharge home a more timely solution. Data showed long delays, highlighting the need to improve the referral system.

Phase 2:

Process changes included:

Discharge Coordinators attend MDT Meetings to integrate discharge planning with existing clinical pathways.

Communication of Patient Lists provided an overview of referrals across sites.

SVUH Consultant led approval of referrals served to reduce delays using phone and email processes.

Flexible approach to clinical decision making allowed SVUH prioritize transfers based on patient need when bed availabile.

Phase 2 began in April 2024, with SCH leads attending SVUH MDTs to support cross-site implementation.

Data from April & May 2024 show improvements. 28 referrals were made, 26 accepted and 14 transferred. The average time from referral to acceptance reduced from 11 days (Q1) to 4.5 days (Q2) and time from acceptance to transfer reduced from 8 to 2 days.

Analysis

Preliminary data suggests improved efficiency in acceptance and transfer of patients. Ongoing QIP efforts will support further optimization bed utilization across both SVUH and SCH.

References

1. Cadel L, Kuluski K, Wodchis WP, Thavorn K, Guilcher SJT. Rehabilitation interventions for persons with hip fracture and cognitive impairment: A scoping review. PLoS One. 2022 Aug 15;17(8):e0273038.

2. Backman C, Shah S, Webber C, Turcotte L, McIsaac DI, Papp S, Harley A, Beaulé P, French-Merkley V, Berdusco R, Poitras S, Tanuseputro P. Postsurgery paths and outcomes for hip fracture patients (POST-OP HIP PATHS): a population-based retrospective cohort study protocol. BMJ Open. 2022 Dec 29;12(12):e065599.

FP – 16

PATIENT AND PUBLIC INVOLVEMENT DURING RESEARCH ABOUT HIP FRACTURE: CHALLENGES AND OPPORTUNITIES

Emma L Sutton[1,3], Hannah E Reilly[1,3], Tarunya Vedutla[1], Teresa Melody[1], Caroline Miller[1], Srihari Tippa[2], Ranaganayaki S Gudivada[2], Anne E Topping[1,3]

1 University Hospitals Birmingham NHS Foundation Trust, Institute of Translational Medicine, Heritage Building, QEHB, B15 2TH, UK
2 Birmingham Community Healthcare NHS Foundation Trust, Priestley Wharf Birmingham B7 4BN, UK
3 University of Birmingham, College of Medical and Dental Sciences, School of Nursing and Midwifery, Edgbaston, Birmingham B15 2TT, UK

Aims

Mortality after hip fracture in England, Wales and Northern Ireland has fallen from 8.4% (2013) to 5.6% (2023). Yet, 30-day readmissions remain high, dropping by 1% in the last decade (12.7% - 11.7%) and costing £14.5 million per year. This research explored what could be done to reduce readmission and was conducted in the Midlands, United Kingdom, which is super-diverse and experiences high levels of deprivation. We iteratively designed a PPI recruitment strategy to include people from diverse backgrounds and with experience of hip fracture. We analysed associated challenges and opportunities.

Methods

Guidance from Goodwin et al (2023) (based on INCLUDE framework 2020) is intended to boost recruitment of older people as research participants, but we used this to tailor PPI recruitment. Our strategy involved: i) a poster inviting patients, carers, health and social care professionals (HSCP) - co-designed & cascaded via stakeholders: Midlands PPI groups, Care Homes (with NIHR ENRICH), Extra Care Charitable Trust, using hospital/care home notice boards/newspaper, twitter ii) meetings with faith groups (the Guru Nanak Ladies, and chaplaincy at one Midlands hospital). Data on challenges/opportunities was collected by: i) self-reflection logs (ARTHUR leads) ii) e-mail survey: PPI members and HSCP in England who conduct PPI for older people.

Results

From January 2023 – April 2024 we received 27 approaches. Eight were enrolled (patient (1), staff (1), patient and staff (1), carer (5)). Two withdrew on medical grounds. Nineteen were excluded: not hip fracture (11) not fragility fracture (3), not willing (2) conflicted (1) unable to contact (1) carer >40 years ago (1).

Eight/12 HSCP and 8 PPI members returned survey, 6 reflective entries from two ARTHUR leads were reviewed. Challenges: PPI members i) could not be recruited during their admission ii) spoke English as first language iii) may struggle to grasp the concept of PPI iv) experienced illness v) could not always travel vi) were frustrated by governance process vii) did not often live alone (patient members). Opportunities – we developed: i) alternative methods to approach via osteoporosis clinics, posters, faith leaders ii) co-designed terms of reference with PPI members to support understanding iii) links with charitable partners in the community iv) regular recruitment drives to counter slow recruitment vi) inclusivity of cognitive impairment vi) diverse communication methods to prevent digital exclusion and to make travel an option not a necessity.

Conclusions

Running a PPI group with an older hip fracture population has significant challenges to ensure the needs of the group is appropriately supported and that adequate representation is gained. We propose specific funding for a study PPI lead, in addition to a research fellow could add value to research for older people especially in super diverse settings, and to prevent exclusion of older people living alone.

FP – 17

PATIENT PERSPECTIVES ON INTENSIFIED ACUTE HOSPITAL PHYSIOTHERAPY AFTER HIP FRACTURE SURGERY: A QUALITATIVE STUDY

Theresa Bieler[1], Camilla Kampp Zilmer[1], Inger Birgitte Bährentz[1], Signe Østergaard Zoffmann[1], Søren Overgaard[1,2], Morten Tange Kristensen[1,2], Therese Emborg[1]

1 Department of Physical and Occupational Therapy or Orthopedic Surgery, Copenhagen University Hospital Bispebjerg and Frederiksberg
2 University of Copenhagen

Aim

Intensified acute in-hospital physiotherapy (IP) after hip fracture surgery seems feasible and may enhance recovery of mobility but the patient perspective has not been explored. The aim of this study was to explore patients' experience, perspectives, and acceptability of an IP-program in an acute care setting after hip fracture surgery.

Methods

The study was designed as a qualitative study nested to a feasibility trial. The patients in the feasibility trial were randomized 2:1 to IP with two daily sessions on weekdays versus usual care physiotherapy (UC) with one daily session on weekdays. In the qualitative study we conducted individual, face-to-face, semi-structured interviews of 10-15 minutes duration with all patients in each arm of the feasibility trial. Patients were interviewed about their experiences with acute in-hospital physiotherapy the day before discharge from the acute hospital. In total 47 patients were interviewed and 43 (mean age: 78.2 years, 30 women) were included in the analysis; 28 from the IP-group and 15 from the UC-group. Systematic text condensation was the strategy for analysis of the interviews.

Results

We identified 3 themes in our analysis: "Goals/wishes for Life after Hip Fracture." "Emotional Aspects of Recovery", and "The Physiotherapist – a Multifaceted Role". Patients in the IP-group had a high awareness of the physiotherapeutic intervention and experienced it as having significantly positive impact on their recovery. They experienced functional progress for each session, which translated into higher motivation, reduced uncertainty, increased confidence in their ability to regain basic mobility skills, independence and reach their ultimate goal of returning to their own home and resume daily life. Similarly, IP increased the patients' self-confidence, so they pushed themselves to the limit and persisted for longer time and became more optimistic about their future. This positive cascade was also highly facilitated by the individualistic and holistic approach of the physiotherapists.

In comparison the UC-group had low to no awareness of the physiotherapeutic intervention, and many were not aware of having received physiotherapy or could not distinguish the physiotherapists from other staff groups. They did not convey the same experiences of functional progress nor the associated emotional and motivational benefits.

Conclusion

From a patient perspective IP is received positively and is highly acceptable. IP is associated with a series of emotional benefits, which have a synergetic impact on the patients' motivation, self-confidence, and overall experience of progress.

FP – 18

INVESTIGATING THE QUALITY OF LIFE AND MORTALITY AMONG PATIENTS WITH PERTROCHANTERIC HIP FRACTURES IN NORTHERN GREECE

Panagiotis Konstantinou[1,2], Lazaros Kostretzis[1], Georgios Fragkiadakis[3], Anastasios P. Nikolaides[2], Ioannis Gigis[1], Pericles Papadopoulos[1], Konstantinos Ditsios[1]

1 Aristotles University of Thessaloniki, 2nd orthopaedic department, Gennimatas Hospital, Thessaloniki, Greece
2 University Hospitals Birmingham, NHS Foundation trust, Birmingham, UK
3 Hellenic Open University, School of Social Science, Patra, Greece

Aims

Fragility-related pertrochanteric fractures have become a significant public health concern, with a rising incidence attributed to the expanding elderly demographic. Assessing patient-reported health-related quality of life (HRQoL), mortality, and factors correlated with them serves as a crucial metric in evaluating the effectiveness of hip fracture surgery.

Methods

This retrospective study conducted at a single center involved 259 patients who underwent surgical intervention with a cephalomedullary nail, with an average follow-up period of 21.7 months. HRQoL was evaluated using SF-12 (12 item Short Form) and EQ-5D (EuroQol 5 Dimensions) questionnaires, while mobility was assessed using the Crude Mobility Index (CMI). Surveys were administered during hospitalization and six months post-surgery. Statistical analysis included descriptive statistics, non-parametric tests (such as Kendall, Mann-Whitney, and Wilcoxon), Spearman correlation, and logistic regression analysis conducted using IBM SPSS version 28.

Results

A significant reduction in mean EQ-5D and SF-12 scores was noted at the six-month post-operative mark compared to pre-fracture levels. The ASA score displayed a notable correlation with the decline in HRQoL as measured by the SF-12 questionnaire. The 30-day post-operative mortality rate was 9.3%, rising to 32.4% at one year. Particularly noteworthy was the considerable increase in 30-day mortality during the pandemic period (5.0% vs. 12.0%; P=0.003).

Conclusions

Pertrochanteric hip fractures lead to enduring deterioration in quality of life. Given the high annual mortality rates, further research is imperative to develop policies aimed at preventing hip fractures and mitigating mortality risks.

FP – 19

SOCIOECONOMIC POSITION AND CHRONIC OPIOID USE AFTER HIP FRACTURE SURGERY: A DANISH POPULATION-BASED COHORT STUDY

Nickolaj Risbo[1], Vera Ehrenstein[1], Per Hviid Gundtoft[2], Jan-Erik Gjertsen[3], Alma Becic Pedersen[1]

1 Department of Clinical Epidemiology, Aarhus University Hospital and Department of Clinical Medicine, Aarhus University, Denmark
2 Department of Orthopedic Surgery, Aarhus University Hospital, Aarhus, Denmark
3 Department of Orthopedic Surgery, Haukeland University Hospital and Department of Clinical Medicine, University of Bergen, Bergen, Norway

Aims

Chronic opioid use is a common and serious complication after hip fracture surgery. Low socioeconomic position (SEP) is associated with higher incidence of hip fracture and with higher subsequent mortality, but the evidence is sparse on the social inequality in opioid use after hip fracture. We examined the association between markers of SEP and risk of chronic opioid use after hip fracture surgery.

Methods

In this nationwide cohort study using data from Danish registries, we included patients aged ≥65 years operated for hip fracture in 2010-2018 (n=52,240). We obtained individual-level data on markers of SEP (education level, liquid assets 5 years before surgery, and cohabitation). Chronic opioid use was defined as ≥2 dispensings of opioids during 31-365 days after surgery. We used log-binomial regression to calculate adjusted risk ratios (aRR) of chronic opioid use with 95%-confidence intervals (CI) comparing patients within each SEP marker. We dealt with mortality using inverse probability of censoring weights. We adjusted for age, sex, surgery year, and relevant markers of SEP. To investigate the dosage, all doses were converted to morphine milligram equivalents (MME) using a conversion factor corresponding to the specific opioid type.

Results

Most patients were women (70%), the median age at surgery was 83 years, prevalence of patients with Charlson Comorbidity score of 3+ at surgery was 21%, and prevalence of opioid users 6 months before surgery was 20%.

The risks of chronic opioid use were: 35% for low, 33% for medium vs 30% for high level of education (aRR 1.20 (CI 1.15-1.25) and 1.16 (CI 1.10-1.21)) for patients with low and medium levels of education vs. high), 38% for low, 32% for medium vs 29% for high level of liquid assets (aRR 1.37 (CI 1.33-1.41) and 1.15 (CI 1.11-1.19)) for patients with low and medium levels of liquid assets vs. high), 34% for patients living alone vs 32% for patients cohabiting (aRR 1.14 (CI 1.11-1.17).

Median MME dose was 2500 mg for patients with low education compared with 2100 mg for patients with high education, 3000 mg for patients with low liquid assets compared with 2000 mg for patients with high liquid assets, and 2500 mg for patients living alone compared with 2300 mg in patients cohabiting.

Conclusions

Low level of education, less liquid assets, and living alone were associated with a higher risk of chronic opioid use and higher MME doses in the first year after hip fracture surgery. Interventions targeting patients identified as being at greatest risk is important to reduce social inequality, side effects of opioid use including falls and secondary fractures, and subsequently mortality.

FP – 20

WHAT COGNITIVE AND PHYSICAL FACTORS PREDICT FALL RISK IN PATIENTS WITH DEMENTIA?

Ilkem Guzel[1], Filiz Can[2]

1 Yuksek Ihtisas University, Department of Physiotherapy and Rehabilitation, Ankara, Türkiye
2 Hacettepe University, Faculty of Physical Therapy and Rehabilitation, Ankara, Türkiye

Aims

Dementia is a progressive neurodegenerative disorder that primarily affects older adults, leading to significant cognitive decline and functional impairments. One of the critical concerns in managing dementia patients is the increased risk of falls, which can result in severe injuries, including fractures. Falls not only contribute to physical frailty but also exacerbate cognitive dysfunction, creating a vicious cycle that severely impacts the quality of life and increases healthcare costs. Understanding the multifaceted relationship between cognitive impairments and physical decline is crucial for developing effective interventions to mitigate fall risk in this vulnerable population. This study aims to evaluate the relationship between fall risk and various cognitive and physical factors in dementia patients.

Methods

Thirty participants (83.55±6.69) with mild to moderate dementia were selected from nursing homes in Ankara, Türkiye. The inclusion criteria ensured that participants had a clinical diagnosis of dementia and could comprehend and perform the required tests. The study was a cross-sectional design and Johns Hopkins Fall Risk Assessment Tool (JHFRAT), Spatial Orientation Test, Mental Rotation Test, Visual Reproduction Subtest of the Wechsler Memory Scale, Reaction Time Measurement and 30-Second Sit-to-Stand Test assessments were used. Correlation analyses were conducted to examine the relationships between fall risk (JHFRAT scores) and the cognitive and physical parameters mentioned above.

Results

The results revealed significant relationships between fall risk and several cognitive and physical factors. There was a positive correlation between JHFRAT scores and reaction time ($r=0.518$, $p=0.004$), indicating that slower reaction times were associated with higher fall risk. Spatial orientation showed a negative correlation with JHFRAT scores ($r=-0.389$, $p=0.037$), suggesting that better spatial orientation was linked to lower fall risk. Additionally, lower extremity strength, as measured by the 30-Second Sit-to-Stand Test, was negatively correlated with fall risk ($r=-0.478$, $p=0.009$), indicating that greater muscle strength in the legs was associated with reduced fall risk. No significant relationships were detected between JHFRAT scores and the Mental Rotation Test or the Visual Reproduction Subtest of the Wechsler Memory Scale.

Conclusions

This study highlights the significant impact of cognitive and physical factors on fall risk in dementia patients. The findings underscore the importance of incorporating both cognitive and physical rehabilitation programs in the care of dementia patients to reduce fall risk. Interventions that enhance spatial orientation, improve reaction time, and strengthen lower extremity muscles could be particularly effective in reducing fall risk. Healthcare professionals should consider these factors when assessing fall risk and designing individualized care plans for elderly patients with dementia.

FP – 21

THE IMPACT OF SURGERY TIMING ON DELIRIUM IN ELDERLY PATIENTS WITH FRAGILITY FRACTURES: A RETROSPECTIVE ANALYSIS

Cumhur Deniz Davulcu, Derya Akbaba

Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Orthopedics and Traumatology

Aim

The aim of this study is to evaluate impact of prolonged preoperative hospital stay on incidence of postoperative delirium in patients presenting with femoral intertrochanteric fractures, which are classified as fragility fractures. It examines predisposing factors for development of delirium, with a particular focus on role of comorbidities such as dementia. The importance of targeted interventions to improve preoperative and postoperative care processes and reduce incidence of delirium is emphasized.

Methods

A retrospective analysis was conducted on 51 patients (13M, 38F) who presented to emergency with intertrochanteric femur fractures classified as fragility fractures following minor trauma between November 2017 and December 2023. The average age of patients was calculated as 77.32 years (range 68-90). All patients underwent proximal femoral nailing surgery. Patient records were reviewed to collect data on preoperative hospital stay duration, existing conditions and surgical variables. The Confusion Assessment Method (CAM) was used to identify cases of postop delirium. Patients exhibiting symptoms predisposing them to delirium in postop period were consulted by psychiatry department.

Results

The study found a statistically significant relationship($p< 0.05$) between prolonged hospital stay in preop period and incidence of postop delirium in patients with identified fragility fractures. There was no significant difference found in patients' existing comorbidities. Postoperatively, delirium was detected in 13 patients (4M,9F). 6 had diagnosis of dementia in preop period. Among patients who developed delirium postoperatively, 2 had preoperative diagnosis of dementia. The mean length of hospital stay in preop period for patients who developed delirium was calculated as 6.18 days(4-28). Patients with preop hospital stay exceeding 4 days showed 29.5% higher risk of developing delirium compared to those with shorter hospital stay. And, certain preexisting conditions, such as dementia and Alzheimer's disease, were identified as potential risk factors for delirium.

Conclusion

Fragility fractures represent a clinical condition that requires close clinical monitoring and care not only during surgery but also in pre and postoperative periods. Appropriate orthogeriatric treatment reduces hospital stay, complication rates and mortality. Key considerations during surgery include pain management, early mobilization, fluid management and delirium prevention. This study highlights importance of considering preoperative hospital stay as a potential predictor for delirium development in elder population following fragility hip fractures. Early identification of at-risk patients and targeted interventions during preoperative period can contribute to reducing delirium incidence in this population and improving overall postoperative outcomes.Further prospective studies are needed to validate these findings and explore preventive strategies.

FP - 22

INITIATION OF ANTI-OSTEOPOROSIS TREATMENT IN OLDER HIP FRACTURE PATIENTS IS MORE SUCCESSFUL WITH ORTHOGERIATRIC MODEL

Matias Pehkonen[1,2], Helmi Rauhaniemi[3], Maria S Nuotio[1,2]

1 University of Turku, Department of Clinical Medicine, Geriatric Medicine
2 Turku University Hospital, Geriatric Medicine
3 University of Turku, Faculty of Medicine

Aims

Anti-osteoporotic treatment (AOT) after hip fracture remains suboptimal despite recommendations and the availability of well-tolerated, safe, and cost-effective treatment options (1-3). In our local university hospital district most hip fracture patients are transferred to primary health care wards after the acute period at the operating hospital. One of the secondary care hospitals has implemented a multidisciplinary orthogeriatric care model for the subacute care period. We investigated the effect of post-acute orthogeriatric care (OGC) on the initiation of new anti-osteoporotic treatment compared to usual care in primary health care wards. In addition, we examined whether gender difference exists in the use of AOT.

Methods

This prospective cohort study included 311 low-energy hip fracture patients aged 70 years or older between September 2019 and September 2020. Periprosthetic and pathologic fractures were excluded from the study. AO treatment was evaluated at baseline, at 4 months and at 12 months post-fracture. Patients receiving orthogeriatric care (OGC) were compared to others receiving usual care. Descriptive statistics are presented with standard deviations (SD). Cross-tabulation of categorized variables are presented with p-values calculated with the Chi-square test.

Results

Our hip fracture cohort consisted of 215 women (69 %) and 96 men (31 %). The average age was 83,8 years (median 83, SD 6.9 years). At baseline 93% of all patients did not have previous AOT, 4 % had AOT history, and 4 % had current AOT. At 4 months the proportions were 78 % (no AOT), 3 % (previous AOT), and 19 % (using AOT). At 12 months the proportions were 61 % (no AOT), 5 % (previous AOT), and 34 % (using AOT). In women the proportion of AO treatment at 12 months was greater (40 %, n = 67) compared to men (19 %, n = 13) (p=0.002).

During the one-year follow-up 24 % of the patients had deceased or left the study. Of all patients, 36 % (n = 81) were in the OGC group, and 64 % (n = 144) were transferred to primary health care wards. In the OGC group the proportion of active AO treatment was greater (49 %, n = 40), compared to patients treated in primary health care wards (27 % n = 39) (p <0.001).

Conclusions

In our study, the initiation of AOT after hip fracture was more successful in patients receiving OGC in the subacute period. Orthogeriatric care model should be implemented for all older hip fracture patients to achieve effective secondary prevention of fragility fractures. Further studies are warranted to investigate the reasons for inferior AOT in men.

References

1. Malle O, Borgstroem F, Fahrleitner-Pammer A, et al. Mind the gap: Incidence of osteoporosis treatment after an osteoporotic fracture - results of the Austrian branch of the International Costs and Utilities Related to Osteoporotic Fractures Study (ICUROS). Bone 2021 Jan:142:115071.

2. Skjødt M K, Ernst M T, Khalid S, et al. The treatment gap after major osteoporotic fractures in Denmark 2005-2014: a combined analysis including both prescription-based and hospital- administered anti-osteoporosis medications. Osteoporos Int 2021 Oct;32(10):1961-71.

3. McCloskey E, Rathi J, Heijmans S, et al. The osteoporosis treatment gap in patients at risk of fracture in European primary care: a multi-country cross-sectional observational study. Osteoporos Int 2021 Feb;32(2):251-59.

FP – 23

ASSESSING IMPACT OF THE 5 NATIONS CONSENSUS PAPER ON IV ZOLEDRONATE ADMINISTRATION POST-HIP FRACTURE IN OLDER PATIENTS

Jasen Soopramanien[1], Anisha Wakefield[1], Lindsey Marshall[2], Jessica Nightingale[2], Opinder Sahota[2]

1 University of Nottingham
2 Queen's Medical Centre, Nottingham

Aims

Hip fractures in older people result in significant morbidity and increased mortality. Between 2-10% will sustain a 2nd hip fracture over the following 2 years, thereby recognising the importance of secondary osteoporosis prevention. Intravenous (IV) zoledronate (Zol) is now recommended as a first-line treatment supported practically by the 5 Nations Consensus Paper (5-NCP) on the administration of IV Zol.

The objective was to assess the impact of the 5-NCP on administration rates of IV Zol.

A 2-cycle audit performed before and after the implementation of advice from the 5-NCP relating to older people presenting with acute hip fractures at a major teaching hospital.

Methods

Plan-Do-Study-Act (PDSA) methodology was used to implement change. A baseline audit was undertaken, followed by a presentation of the findings and the 5-NCP. Changes were implemented in the treatment pathway and the audit repeated. Data was collected via the Trust's trauma registry. A Mann-Whitney U test was performed to evaluate any association between implementation of the 5-NCP and IV Zoledronate uptake.

Results

375 older people underwent the baseline audit between January to June 2023, and 233 in the follow up audit from January to March 2024. The mean (SD) age was 82.5 (8.9) years old. 43.3% of patients suffered extracapsular fractures, while 56.6% were intracapsular. There was significant improvement in administration rates of IV Zol after implementation of the advice from the 5-NCP by 16.2% ($p<0.001$). Logistic regression showed that patients were 1.97 [1.43 – 2.72] times more likely to receive IV Zol post-implementation of 5-NCP advice ($p<0.001$).

Conclusion

The 5-NCP advice has increased administration rates of IV Zol, with particular improvement in earlier administration of IV Zol to inpatients. Further improvement is required for borderline creatinine clearance and poor dentition.

References

1. National Osteoporosis Guideline Group. Clinical guideline for the prevention and treatment of osteoporosis. 2021.

2. Johansen A, Sahota O, Dockery F, Black AJ, MacLullich AMJ, Javaid MK, et al. Call to action: a five nations consensus on the use of intravenous zoledronate after hip fracture. Age Ageing. 2023 Sep 1;52(9).

FP – 24

CORRELATION OF INFLAMMATORY BIOMARKERS IN GERIATRIC PATIENTS WITH SARCOPENIA - A CASE CONTROL STUDY

Anup Singh, Ahalya K

Institute of Medical Sciences Banaras Hindu University

Aim

The aim of our study was to evaluate the correlation of inflammatory biomarkers (CRP, IL-6, TNF-α, IGF-1) with sarcopenia in elderly.

Methods

We conducted a hospital-based case control study in patients aged more than/equal to 60 years visiting the Geriatric Medicine outpatient clinic. After obtaining informed consent, subjects were screened using SARC-F tool and diagnosis confirmed as per Asian Working Group for Sarcopenia (AWGS) criteria. Biomarkerquantification (CRP, IL-6, TNF-α, IGF-1) was done from serum samples using enzyme-linked immunosorbent assay (ELISA) in 30 cases and 30 controls. These biomarkers (CRP, IL-6, TNF-α, IGF-1) were then correlated with sarcopenia using appropriate statistical tools.

Results

Mean age of cases (n=30) was 67.6 ±7.5 years and of controls was 66.1 ± 6.2 years out of which 56.7% of cases and 46.7% of controls were females. Among the four biomarkers assessed, mean CRP among cases (5.58 ± 2.47mg/l) and controls (2.98 ± 3.0 mg/l) (P=0.001) and mean TNFα among cases (176.66 ± 163.1 pg/ml) and controls (45.1 ± 89.14 pg/ml) (P=0.000) differed significantly statistically. Sarcopenia was found to have significant inverse correlation with CRP and TNF-α. No significant differences were observed for levels of IL-6 and IGF-1.

Conclusions

Sarcopenia in elderly is associated with increased levels of inflammatory markers TNF-α and CRP. These may be potential biomarkers and further study is warranted to determine the physiological role of immune aging in the pathogenesis of sarcopenia.

FP – 25

THE RELATIONSHIP BETWEEN TESTOSTERONE LEVELS, HIP FRACTURES, AND OSTEOPOROSIS IN MALE PATIENTS

Raffi Armağan[2], İsmail Eyüp Dilek[3], Yusuf Altuntaş[2], İsmail Tüter[2], Ahmet Hamdi Olçar[1]

1 Sancaktepe Training and Research Hospital
2 Şişli Hamidiye Etfal Training and Research Hospital
3 Düzce University School of Medicine Department of Urology

Aims

The theoretical relationship between osteoporosis and testosterone is well-known.This study explores the impact of male hypogonadism on osteoporosis and hip fractures,aiming to assess if screening for male hypogonadism can help prevent low-energy hip fractures in elderly men.

Methods

This study compares 38 patients over the age of 65 who were operated on for hip fractures with 37 elderly men without hip fractures who visited the orthopedics and traumatology outpatient clinic for other reasons.Blood testosterone levels were standardized by collecting morning blood samples after 8 hours of fasting.Serum total blood testosterone levels, albumin, PTH, ALP, adjusted calcium, 25-hydroxyvitamin D, P, BMI,and BMD were measured for all patients and volunteers. Patients were divided into normal, osteopenic, and osteoporotic groups for further analysis. Relationships between variables were analyzed using Pearson correlation analysis, simple linear regression and multiple linear regression analysis was applied to models with multiple predictor variables.

Results and Conclusions

Group 1 consisted of patients with hip fractures, Group 2 served as the control group. The mean age and range was 70.4/67-86(Group 1), and 72.81/66-88 (Group 2) respectively. Both groups were comparable in terms of age and comorbidities. The average testosterones value for Group 1 was 1.91 ng/dl (±1.31) and 5.99 ng/dl (±2.54)for Group 2. Independent samples t-tests revealed significant differences between the testosterone (p=0.09),P, BMI, BMD, and vitamin D values of patients between groups. Hip fracture patients having significantly lower values. Conversely,adjusted serum calcium levels were found to be higher in the group 1 (p=0.00). No statistically significant differences were observed in serum PTH and ALP levels. In the one-way ANOVA test of patients divided into three groups based on BMD,significant differences were observed between the groups in terms of testosterone and vitamin D levels(p=0.048 and p=0.027). Post hoc analysis revealed significant differences in testosterone between the normal and osteoporotic groups, and in vitamin D between the normal and osteopenic groups. Correlation analysis showed a positive correlation between BMD and both testosterone and vitamin D (r=+0.411, r=+0.291), and a negative correlation with calcium (r=-0.272). Multiple linear regression models identified testosterone as the predictor with the highest importance. These results show a correlation between osteoporosis and testosterone levels in older men and fractures.Hip fracture prevention and prediction may benefit from this association. Testosterone levels may be a useful screening parameter for prediction. Preventing osteoporotic fractures may be possible by treating male hypogonadism.Decrease in testosterone is observed when osteoporosis has already developed, while a decrease in vitamin D is more evident at the earlier osteopenia stage. This relationship aligns with the BMD-fracture relationship.

References

1. Chang, K. P., Center, J. R., Nguyen, T. V., & Eisman, J. A. (2004). Incidence of hip and other osteoporotic fractures in elderly men and women: Dubbo Osteoporosis Epidemiology Study. Journal of bone and mineral research, 19(4), 532-536.

2. Orwoll, Eric S., and Robert F. Klein. "Osteoporosis in men." Endocrine reviews 16.1 (1995): 87-116.

3. Myers, A. H., Robinson, E. G., Natta, M. L. V., Michelson, J. D., Collins, K., & Baker, S. P. (1991). Hip fractures among the elderly: factors associated with in-hospital mortality. American Journal of Epidemiology, 134(10), 1128-1137.

4. Cauley JA, Cawthon PM, Peters KE, Cummings SR, Ensrud KE, Bauer DC, Taylor BC, Shikany JM, Hoffman AR, Lane NE, Kado DM, Stefanick ML, Orwoll ES; Osteoporotic Fractures in Men (MrOS) Study Research Group. (2016). Risk factors for hip fracture in older men: the osteoporotic fractures in men study (MrOS). Journal of Bone and Mineral Research, 31(10), 1810-1819.

5. Seeman, E. (1995). The dilemma of osteoporosis in men. The American journal of medicine, 98(2), 76S-88S.

6. Diamond, T., Stiel, D., Lunzer, M., Wilkinson, M., & Posen, S. (1989). Ethanol reduces bone formation and may cause osteoporosis. The American journal of medicine, 86(3), 282-288.

FP – 26

LOCAL OSTEOENHANCEMENT PROCEDURE: A METHOD TO INCREASE LOCAL BONE DENSITY TO POTENTIALLY PREVENT FURTHER FRACTURES

Christian Bernhard Frank, Adrian Stuetzle, Sheip Panev

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland

Introduction

Osteoporosis is a major burden for society, patients, and physicians. Pharmacological fracture prevention takes time and therefore may not prevent a new fracture in patients with an imminent fracture risk. LOEP is a new approach to strengthening the femoral neck with bone voids such as those found in patients diagnosed with osteoporosis. The material is osteoconductive and is gradually replaced by bone over time.

Method

We performed surgeries on four patients (two males and two females) with a total of five treated hips. All patients had a previous fragility fracture and were considered high risk based on low T-scores on DXA, high hip fracture risk probability (FRAX scores > 3%), and a diagnosis of postmenopausal osteoporosis or secondary osteoporosis. Operations were performed under general anesthesia with double team time-out. All team members (scrubs, surgeons, and anesthetists) completed training which consisted of video instruction, didactic presentations, general information, and bioskills lab instructions with sawbones or cadavers. In addition, surgeons had guidance from experienced users. Patients had post-operative physiotherapy and instructions concerning walking behaviors and weight bearing.

Results

Procedures were completed with minimal blood loss. Peri- and postoperative phases were not altered. One woman suffered a subcapital femoral neck fracture at the material-bone interface 5 weeks after the procedure due to a torsional movement during a change of direction. This fracture resulted because of a very thin cranial subcapital cortical bone and was determined to be incomplete but painful and thus treated with total hip replacement. A standard approach was followed during hip replacement with no special instruments or adaptations and no complications. There were no other femoral neck fractures during the follow-up. Radiographic follow-up revealed bone formation in the filled voids.

Conclusion

The Local Osteo-Enhancement Procedure can be performed by a well-instructed team. It can potentially prevent femoral neck fractures in patients with imminent and high fracture risk. However, the number needed to treat is unknown and patient selection is based on the risk assessment of surgeons. The indication should consider the patient's medical history, fracture risk, osteoporosis therapy, lifestyle, and life expectancy. In addition, consideration should be given to patients with a high risk of contralateral hip fracture after an index hip fracture, advancing coxarthrosis, and unique bone architecture and morphology around the femoral neck bone void. Alternative options to anesthesia utilizing local with IV sedation have the potential to reduce the risks associated with general anesthesia. Although this is being performed in other countries with early success, future studies will be needed to develop the optimized protocol.

References

1. AGN1 implant material to treat bone loss: Resorbable implant forms normal bone with and without alendronate in a canine critical size humeral defect model. Shaul JL, Hill RS, Bouxsein ML, Burr DB, Tilton AK, Howe JG. Bone. 2022 Jan;154:116246.

2. Treatment of bone loss in proximal femurs of postmenopausal osteoporotic women with AGN1 local osteo-enhancement procedure (LOEP) increases hip bone mineral density and hip strength: a long-term prospective cohort study. Howe JG, Hill RS, Stroncek JD, Shaul JL, Favell D, Cheng RR, Engelke K, Genant HK, Lee DC, Keaveny TM, Bouxsein ML, Huber B. Osteoporos Int. 2020 May;31(5):921-929.

3. Dual-Layer Spectral-Computed Tomography Enhances the Separability of Calcium-Based Implant Material from Bone: An Ex Vivo Quantitative Imaging Study. Peña JA, Shaul JL, Müller M, Damm T, Barkmann R, Kurz B, Campbell GM, Freitag-Wolf S, Glüer CC. J Bone Miner Res. 2022 Dec;37(12):2472-2482.

FP – 27

THE RELATIONSHIP BETWEEN MUSCLE STIFFNESS, PAIN, KNEE FUNCTION AND FUNCTIONAL PERFORMANCE IN EARLY-STAGE OA

Aysenur Goksen[1], Filiz Can[2]

1 Tarsus University, Department of Physiotherapy and Rehabilitation, Mersin, Türkiye
2 Hacettepe University, Faculty of Physical Therapy and Rehabilitation, Ankara, Türkiye

Background and Aims

Studies reported that RF muscle strength decreased as the severity of the disease increased in OA. Stiffness in RF muscle may also cause a gradual decrease in intrinsic shock absorption ability of the joint and may play an important role in the development of early-stage OA.The involvement of the Biceps Femoris (BF) muscle in this stiffness may aggravate the symptoms. Shear wave elastography measures the mechanical properties of a tissue, including muscle stiffness. Although the evaluation surrounding soft tissues by clinical measurements are extremely important for detecting early-stage knee OA, there is no study measuring muscle stiffness in RF and BF muscles and investigating possible relationship between the other parameters. The aim of this study was to measure muscle stiffness in RF and BF muscles and to investigate possible relationship between muscle stiffness, pain, knee functions and functional performace in early-stage knee OA.

Methods

Thirty-one patients aged between 45-67 years diagnosed with early-stage knee OA were included in this study. Both RF and BF muscle stiffness were evaluated by shear wave elastography (SWE). The pain intensity was measured by Visual Analogue Scale (VAS), knee function with Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and functional performance, using the 6-minute-walk test and step-climbing test.

Results

There were no relationships between RF stiffness, pain, functional performance tests and WOMAC scores ($p>0.05$). Although BF muscle stiffness was not correlated with the other parameters, it was positively correlated with the WOMAC stiffness score ($p<0.014$, $r=0.446$), There was no difference in RF and BF muscle stiffness between the patients($p>0.11$).

Conclusion

BF muscle stiffness may be a determining factor in detecting early-stage OA and more important than RF muscle stiffness. This may be caused by persistent BF muscle spasm due to the flexor reflex in the early period and can be reduced by preventive physiotherapy.

FP – 28

AUTOMATED ELECTRONIC MEDICAL RECORD REUTILIZATION APPLIED TO THE SPANISH NATIONAL HIP FRACTURE REGISTRY

Cristina Ojeda-Thies[1], Paula Rubio-Mayo[2,3], Maria Jesús Jiménez-Cerezo[1,2], Miguel Pedrera-Jiménez[3,4], Noelia García-Barrio[1,2], Juan Luis Cruz-Bermúdez[1,2]

1 12 de Octubre University Hospital, Madrid, Spain
2 12 de Octubre Health Research Institute, Madrid, Spain
3 Polytechnic University of Madrid, Spain
4 Better, Slovenia

Aims

Hip fractures are a common health problem with high mortality, morbidity, dependence and care-related costs, that presents an increasing burden on healthcare systems. Hip fracture audit can improve care of hip fracture patients and aids in assessing and implementing quality improvement measures. Introduction of clinical data by healthcare professionals in forms for audit is often time-concuming and inefficient. The aim of this study was to asses time and costs saved in collecting data on clinical variables of patients treated for hip fractures at our center, for extrapolation of data to the Spanish Hip Fracture Registry (Registro Nacional de Fracturas de Cadera, or RNFC).

Method

Analysis of the ETL (extract, transform and load) process of data included in the electronic health records of patients treated for hip fractures at our centers. The care process was standardized and identified from August 2021 onwards by the creation of the process “proximal femur fracture” associated with SNOMED code 263225007, for all patients admitted with a diagnosis of hip fracture. The IT team created a tool that allowed identifying demographic, administrative, pharmacological and surgical data variables included in the RNFC and collected in the hospital's Electronic Medical Record (EMR) and in the regional healtcare system's Electronic Prescription Module (MUP), as well as subsequently the extraction of said variables in standardized tables for incorporation into the RNFC. The number of extractable variables and time saved compared to manually collectiing data were evaluated, including patients admitted between Augusto 2021 and February 2024.

Results

A total of 1279 hip fracture episodes were identified during the period evaluated, corresponding to 1253 individual patients. The total percentage of variables that have been extracted from the EMR and the MUP was almost 70%, or 47 variables of the 69 that make up the RNFC. An estimated 250 hors were required to develop the code for extraction. .

The average review time of the automatically uploaded data by clinicians was about 6 to 7 minutes per episode, between 128 and 149 hours, compared to 13 to 17 minutes per episode for the manual upload of records, or a total time of 277 vs. 362 hours for the 1279 hip fracture cases analysed. The time invested in programming the ETL would be saved in clinician hours after between 1363 and 2500 hip fracture episodes.

Conclusions

The automation of the process saved between 6-11 minutes for each episode for the clinician when entering the variables under study into the registry. This represents a reduction of nearly 50% in the time spent compared to manual data entry, which could provide a return of the initial investment after only a few years in high-volume hospitals.

References

1. Ojeda-Thies C, Sáez-López P, Currie CT, Tarazona-Santalbina FJ, Alarcón T, Muñoz-Pascual A, Pareja T, Gómez-Campelo P, Montero-Fernández N, Mora-Fernández J, Larrainzar-Garijo R, Gil-Garay E, Etxebarría-Foronda I, Caeiro JR, Díez-Pérez A, Prieto-Alhambra D, Navarro-Castellanos L, Otero-Puime A, González-Montalvo JI; participants in the RNFC. Spanish National Hip Fracture Registry (RNFC): analysis of its first annual report and international comparison with other established registries. Osteoporos Int. 2019 Jun;30(6):1243-1254.

2. Pedrera-Jiménez M, García-Barrio N, Rubio-Mayo P, Tato-Gómez A,et al. TransformEHRs: a flexible methodology for building transparent ETL processes for EHR reuse. Methods Inf Med. 2022 Dec;61(S 02):e89-e102.

3. Pedrera-Jimenez M, Garcia-Barrio N, Rubio-Mayo P, et al. Making EHRs Trustable: A Quality Analysis of EHR-Derived Datasets for COVID-19 Research. Stud Health Technol Inform. 2022 May 25;294:164-168.

4. Pedrera-Jiménez M, García-Barrio N, Cruz-Rojo J, Terriza-Torres AI, et al Obtaining EHR-derived datasets for COVID-19 research within a short time: a flexible methodology based on Detailed Clinical Models. J Biomed Inform. 2021 Mar;115:103697.

FP – 29

CHALLENGING INEQUALITIES IN PATIENT INFORMATION: MULTILINGUAL ONLINE RESOURCE FOR THOSE AFFECTED BY HIP FRACTURE

Arouba Imtiaz[1], Mark Ramsden[2], Dafydd Brooks[1], Antony Johansen[1,3]

1 Trauma and Orthopaedics Department, University Hospital of Wales, CF144XW
2 Trauma and Orthopaedics Department, Mid Yorkshire Trust
3 National Hip Fracture Database, Royal College of Physicians, NW14LE

Aims

People from ethnic minorities face additional challenges in hospital, and these may contribute to poorer progress and a poorer outcome. We set out to develop an online resource to help hip fracture teams provide answers to questions commonly posed by people presenting with hip fracture, and to address inequalities in patients' and their families' access to information.

Methods

In 2021 we surveyed all 167 hospitals in England, Wales, and Northern Ireland which look after people with hip fracture – to identify how many hospital provide printed or digital information, and how many made this available in languages appropriate to their local population.

Results

Most hospitals (70%) claimed that they routinely provided printed information about injury, surgery and recovery, but only 26% could say that they provided this in languages appropriate to their local population. The equivalent figures for digital forms of information were 23% and just 10%.

In discussion with people attending our hospital we produced, piloted, refined and finalised an English language advice sheet to use as a template. Initial Google 'translations' of this were circulated to clinicians within our department who were familiar with this patient group and able to edit and sign off versions in other languages. Interestingly, Google Translate only includes 9 of the 10 commonest first languages of people in the UK, but for these languages most of our editors (93%) felt the initial Google translation would be broadly acceptable to patients. However, nearly two thirds of editors identified limitations in the Google draft, and 50% reported needing to modify technical elements of the text. One third (36%) spent more than two hours editing the text to a form they felt would be accessible to patients. When we surveyed these editors at the end of the process 71% described the final document as highly useful.

Conclusions

This pilot study shows that Google Translate provides a convenient way of drafting patient advice sheets, since clinical staff find it less intimidating to edit a draft document than to compose or translate one from the start. Editing by a clinician is vital if the work is to avoid technical errors and be accessible to patients.

We would recommend this approach to those working with other conditions and other patient groups, as there is clearly a need for information to meet the needs of the patient. We plan to extend our portfolio of 19 languages (the first languages of >3 million people in the UK alone) in collaboration with clinicians fluent in other languages.

FP – 30

ARE DISCHARGE COORDINATORS AN ANSWER FOR REDUCING LENGTH OF STAY IN OLDER PATIENTS WITH FEMORAL FRAGILITY FRACTURES?

Ivan Aganin, Claire Eastick, Nicola Brown, Samson Thongs-George

Basingstoke and North Hampshire Hospital; Trauma and Orthopaedic Surgery; Hampshire Hospitals NHS Foundation Trust

Introduction

We have evaluated whether the presence of a discharge coordinator (DC) effected our unit's length of stay (LOS) in elderly patients with neck of femur fractures (NOFs).

Materials and Methods

This assessment was conducted at a Trauma Unit within a District General hospital, which sees approximately 45 NOF admissions monthly. We have calculated the average monthly LOS data in the last 30 months using national hip fracture database. During this period, our unit experienced three distinct phases: a 17-month period with an assigned DC, followed by a 4-month interval during which the position remained unfilled, succeeded by an 8-month period with the DC position filled. Given the dynamic external pressures and the evolving social care landscape during this time frame, including the challenges posed by the COVID-19 pandemic, we normalized our LOS data using the national LOS data from the national hip fracture database. Lastly, we have conducted cost analysis to evaluate the cost-effectiveness of the DCs position.

Results

Presence of DC was strongly correlated with significant and progressive reduction in average monthly LOS when compared to national trends. During a 17 months period of DC presence our unit's LOS data decreased from 2.3 days above national average to 0.5 days below national average. Following a 4-month interval with the DC role vacant, our unit's LOS increased by 1 day and rose from 0.5 days below national average to 0.5 days above. Upon the reinstatement of the DC position, the LOS data decrease by 1.5 days over an 8-month period.

Conclusion

The presence of a discharge coordinator was strongly correlated with significant and progressive reductions in LOS figures for elderly patients with NOFs, when adjusted for national LOS trends. Conversely, the absence of a DC was associated with notable and progressive increases in LOS figures.

FP – 31

HEALTH LITERACY AND ASSOCIATED FACTORS IN ELDERLY PEOPLE WITH MUSCULOSKELETAL PROBLEMS, INCLUDING FRAGILITY FRACTURES

Katerina Athanasopoulou[1], Konstantinos Stolakis[1], Panagiota Vathi-Sarava[1], Petros Galanis[2], Georgios Nikolaou[1], Elias Panagiotopoulos[1], Manolis Mentis[1]

1 University of Patras, Greece
2 National & Kapodistrian University of Athens, Greece

Introduction

Health Literacy (HL) can be described as the ability to use general literacy skills in searching, comprehending, synthesizing and critical processing, applying and disseminating medical information.

Aims

The aim of this study was to investigate the HL level of older adults with musculoskeletal problems (including fragility fractures), the socio-demographic factors that are associated with the low level of HL and the relationship between musculoskeletal symptoms, quality of life and HL.

Methods

This cross-sectional study was conducted in a convenience sample of older adults aged over 65 years old, experiencing musculoskeletal problems/disorders, including fragility fractures. Socio-demographic information were collected and three questionnaires were used: a)the Nordic Musculoskeletal Questionnaire (NMQ), regarding the musculoskeletal complaints, b)the EuroQol (EQ-5D-5L) scale, regarding the health-related quality of life in mobility, self-care, usual activities, pain/discomfort, and anxiety/depression,and c)the European Health Literacy Survey Questionnaire-16 item (HLS-EU-Q16), aiming at evaluating the level of HL.

Results

100 people participated at this study, with an age of 65+. Most of the participants were women, with musculoskeletal pain, arthritis, osteoporosis and fragility fractures.

A large percentage of participants perceived that they had limited HL skills.
A positive correlation was found between HL and educational level.
Participants with more severe musculoskeletal symptoms and worse quality of life had lower level of HL.

Conclusions

There is a significant deficit in the perceived HL of older adults with musculoskeletal problems and this has a negative impact on health outcomes and quality of life. Interventions to increase HL in this patient group contribute to their empowerment and participation in decision making, the promotion of positive health behaviours and lower costs for the health system.

FP – 32

HEALTH SEEKING-BEHAVIORS IN HOSPITALIZATION AMONG FILIPINO WITH FRAGILITY FRACTURES OF THE HIP: A MIXED METHOD STUDY

Julius Bryan Cristobal Abesamis, Erwin Gerard Purungganan Geron, Mary Ruth Padua Rodolfo, Irewin Alagar Tabu

Department of Orthopedics, Philippine General Hospital

Aims

This study delves into both qualitative and quantitative aspects of health-seeking behavior among elderly Filipinos with fragility hip fractures, aiming to understand the influence of cultural, socioeconomic, and healthcare factors on the timing of hospitalization and definitive surgery. Fragility hip fractures profoundly affect the health and quality of life of the elderly, making it essential to uncover facilitators and barriers to healthcare utilization. The study focuses on identifying factors contributing to delays in definitive treatment, with the goal of forming improving and emphasizing existing policies to enhance fragility fracture management.

Methods

The study was conducted between January and May 2024, recruiting 30 eligible patients at the University of the Philippines – Philippine General Hospital, utilizing a mixed-method design. Data collection involved using interviews and surveys to collect qualitative and quantitative data. Coding and thematic analysis was done using NVIVO 14 software.

Results

Findings revealed various factors contributing to delayed consultation among Filipino patients with fragility hip fractures. Hospitalizations costs were not covered fully by national health insurance, making other healthcare costs relying on other family members on minimum wage income. Further delays are due to mutliple consultations within families, often led by the breadwinner and involving multiple members, that complicated the process of treatment. Cultural influences, including a initial preference for alternative medicine also, lack of trust to modern medical services contributed to delays. Accessibility and transportation issues, and logistical barriers during patient treatment outside and within the hospital, further exacerbated delays.

Conclusion

This study provides valuable insights in understanding the complexities of delayed consultations for fragility hip fractures among Filipino patients is vital for improving healthcare access and outcomes. Policy interventions addressing these multifaceted barriers can mitigate delays and enhance fragility fracture management, ultimately relieving burdens on individuals and healthcare systems. This study provides valuable insights to inform targeted interventions and improve fragility fracture care in the Filipino elderly population.

References

1. GHE: Life expectancy and healthy life expectancy. (2019). https://www.who.int/data/gho/data/themes/mortality-and-global-health-estimates/ghe-life-expectancy-and-healthy-life-expectancy

2. National Institute for Health and Care Excellence NICE: Clinical Guideline [CG146] - Osteoporosis: assessing the risk of fragility fracture. 2012 [Accessed 16.01.2023]

3. Tud, A. R., & Claudio, R. S. (2023). A Comparison of Complication Rates between Early and Delayed Surgery among Filipino Patients with Fragility Fractures of the Hip. Acta Medica Philippina. https://doi.org/10.47895/amp.vi0.6799

4. Meara JG, Leather AJM, Hagander L, et al. Global Surgery 2030: evidence and solutions for achieving health, welfare, and economic development. Lancet 2015; 386: 569–624.

5. Pouramin P, Li CS, Busse JW, Sprague S, Devereaux P, Jagnoor J, et al. Delays in hospital admissions in patients with fractures across 18 low-income and middle-income countries (INORMUS): a prospective observational study. Lancet Glob Health 2020;8:811e20.

6. Cortez, K. A., Lai, J. G. L., & Tabu, I. A. (2021). Economic burden and the effects of early versus delayed hospitalization on the treatment cost of patients with acute fragility hip fractures under the UPM-PGH Orthogeriatric Multidisciplinary Fracture Management Model and Fracture Liaison Service. Osteoporosis and sarcopenia, 7(2), 63–68. https://doi.org/10.1016/j.afos.2021.05.004

FP – 33

EVALUATION OF NURSING STUDENTS' AWARENESS AND ATTITUDES ABOUT FRAGILITY

Fazilet Tamer, Nurhan Bayraktar

Atılım University Faculty of Health Sciences, Department of Nursing

Background

Fragility is defined as a reduction in physical function in multiple physiological systems that causes reduced resistance to stressors. The ageing process is defined as a sequential, individual, cumulative and irreversible deterioration process that may endanger the physical, mental and/or social health of the organism. The relationship between changes in the ageing process and geriatric syndromes may affect the clinical and functional capacity of the elderly, making them vulnerable and fragile. Evaluation and improving awareness and attitudes of health professionals are important, especially considering the increase in the elderly population worldwide in recent years.

Aim

In this study, it was aimed to evaluate nursing students' awareness and attitudes about fragility.

Method

The research is a descriptive cross-sectional study. Nursing students enrolled in the spring term of the 2023-2024 academic year were included in the sample. The data of the study were collected by using 'Sociodemographic Characteristics Information Form', 'Awareness Form about Frailty' and 'Frailty Attitude Scale for Health Professionals'. The data of the study were evaluated using SPSS 26 package programme and $p<0.05$ was accepted as significant.

Result

Most of the students participating in the study are female and between the ages of 21-24. More than half of the students stated that they know the definition of the concept of fragility. More than half of the students stated that the first concept that came to mind when they heard the concept of fragility was "being emotionally sensitive". Most of the students mentioned nutritional status among the factors related to fragility and stated that the application of a fragility test to the patient before surgery positively affected the patient's recovery process in the perioperative period. Almost all of the students stated that the concepts of old age and frailty are not the same concepts. It was found that students' attitudes towards fragility were at a medium level.

Conclusion

Nursing students' awareness and attitudes about fragility are at medium level. It is recommended that educational programmes should be planned to increase the awareness of nursing students about fragility and to improve their attitudes towards fragility.

FP – 34

EVALUATION OF PATIENTS' POSTOPERATIVE RESULTS FOR HIP FRACTURE WITH COMPUTERIZED DYNAMIC POSTUROGRAPHY: PFN VS. HA

Ersin Taşkın[1,2], Mahmut Kürşat Özşahin[1], Muhammed Yusuf Afacan[1], Melda Acar[3], Eyyup Kara[3], Ali Şeker[1]

1 Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Orthopaedics and Traumatology
2 Duzici State Hospital
3 Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Audiology

Aims

Proximal femoral nailing (PFN) and hip arthroplasty (HA) are the two most often utilized surgical procedures for treating hip fractures in older patients. The postoperative postural balance and functional outcomes of patients may be significantly influenced by the technical distinctions between PFN and HA. This will influence the surgeon's preferred course of therapy. To examine the functional outcomes of patients treated with PFN and HA following a hip fracture, this study used computerized dynamic posturography (CDP). The aim of that study was to evaluate how the two treatment modalities affected patients' postoperative balance, postural stability, and functional rehabilitation.

Methods

A total of 26 patients who underwent proximal femoral surgery (15 patients PFN [58%] and 11 patients HA [42%]) due to hip fractures were evaluated at least 12 months postoperatively. They were tested by direct radiographs, hip joint examinations, Harris hip score (HHS), and CDP.

Results

Twelve (46%) of 26 patients were male and 14 (54%) were female. The mean age of the participants in the study was 67.9±14.2 years. The mean follow-up period was 24 (12–44) months. The average Harris score of PFN group was 79.3 (46.8–100) points and HA group was 83.7 (61.9–99.9) points. There was no significant difference between the groups in terms of Harris Score (p=0.54). The average of the mixed value of the balance results obtained with CDP (the Composite score) for PFN group was 70.5 (56–79) points, and for HA group was 71.9 (56–83) points. There was no significant difference between the groups in terms of the Composite Score (p=0.47). Accordingly, 12 (80%) of the patients who underwent PFN had good results and 3 (20%) of them had bad results. Eight (72.7%) of those who underwent HA had good results and 3 (27.3%) had bad results. There was no statistically significant difference (p=0.66).

Conclusion

Comparing the composite score for balance results and HHS results for rehabilitation with the data of the patients who underwent PFN and HA, there was no statistically significant difference between these two techniques in terms of postural stability and balance as a result of CDP examination.

FP – 35

COST ANALYSIS OF ARTHROPLASTY TREATMENTS FOR FRAGILITY FRACTURES OF THE FEMORAL NECK: HEMI VERSUS TOTAL HIP ARTHROPLASTY

Serdar Kuzu[1], Mete Özer[2], Muhammed Yusuf Afacan[2], Yahya Deniz[2], Onur Yıldırım[2], Ali Şeker[2], Mehmet Fatih Güven[2], Gökhan Kaynak[2], Mehmet Can Ünlü[2], Önder Aydıngöz[2], Hüseyin Botanlıoğlu[2]

1 Istanbul University-Cerrahpaşa, Vocational School of Social Sciences, Department of Accounting and Taxation
2 Istanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of Orthopaedics and Traumatology

Aims

The primary objective of this study was to investigate the expenses associated with arthroplasty for patients who have experienced fragility fractures in their femoral necks. This study examines the influence of patients' demographic characteristics and comorbidities on the overall costs and evaluates the impact of hospitalization duration, intensive care unit (ICU) requirements and duration, laboratory and radiological examinations, blood product usage, medication and material costs, and the type of arthroplasty (total hip arthroplasty [THA] and hemiarthroplasty [HA]) on the total expenditure.

Methods

This cohort analysis targeted patients diagnosed with fragility fractures of the femoral neck and opted for either HA or THA as treatment. The research examined patient demographic details, comorbidities, and lengths of hospital and ICU stays while calculating overall healthcare expenses. Expenses were categorized as operating room services, radiological investigations, laboratory examinations, blood product utilization, ICU admissions, ward admissions, daily bed rates, and other supportive services including intravenous therapy, dietary counseling and respiratory rehabilitation. The costs were then converted from Turkish lira to US dollars, using the exchange rate applicable during that period.

Results

Data from 92 patients who underwent surgery for fragility fractures of the femoral neck were reviewed (71 HA, 21 THA). The HA group was relatively older ($p=0.054$). The groups were similar regarding the number of comorbidities. Age and gender did not affect costs. The length of hospital stay, need for intensive care, and duration of ICU follow-up were similar for both groups. Comparable costs were observed (HA: $7617±4726, THA: $6659±2979). Radiological ($p=0.001$) and laboratory test costs ($p=0.01$) were higher in the HA group. Although not significantly different, medication, blood products, and intensive care services costs were higher in the HA group. Surgical service costs were significantly higher in the THA group ($p<0.0001$). Radiology costs were higher in the general anesthesia group ($p=0.01$) and surgical service costs were higher in the spinal anesthesia group ($p=0.045$). The chosen procedure was unrelated to gender, type of anesthesia, and the number of additional diseases.

Conclusions

Contrary to commonly held views, no significant difference in total perioperative costs was observed between HA and THA treatments for fragility fractures of the femoral neck. The cost differences due to implants are offset by other healthcare expenditures. Patient-related factors such as age, gender, and the type and number of comorbidities do not affect the total cost. The perioperative follow-up period is similar for both procedures. As a result, the treatment method to be applied in the surgical treatment of hip fractures can be left to the choice of the surgeon in line with its experience, taking into account the patient's quality of life.

FP – 36

BETTER FUNCTIONEL OUTCOME FOR PATIENTS OPERATED WITH SPAIRE APPROACH WHEN SUFFERING FROM A FEMORAL NECK FRACTURE

Maren Paus[1,2], Mads Sundet[1,2], Ulf Sundin[1,2], Sylvia Sunde[1], Mette Marthinsen[1], Siri Lillegraven[2], Haldor Valland[1], Karin Hesseberg[1]

1 Diakonhjemmet Hospital, Oslo, Norway
2 Remedy, Oslo, Norway

Aim

Displaced femoral neck fractures are usually treated with hemiarthroplasty. The lateral (Hardinge) approach has been regarded as the standard surgical approach for this operation, and this approach is currently recommended in several guidelines. There is a concern that the lateral approach is associated with limping and reduced gluteal function, and a muscle sparing posterior approach, SPAIRE (Saving Piriformis And Internus Repair Externus) has been developed. This approach is hypothesized to improve hip function, reduce pain and maintain a low risk of prosthesis dislocation. The aim of this study was to compare the lateral approach and the SPAIRE approach, with both complication rates and physical function as outcomes.

Methods

We used data from a hospital-based register at our hospital. From September 2018, the orthopedic department gradually changed the standard surgical approach for hemiarthroplasties from the direct lateral approach to the SPAIRE approach. Community-dwelling patients were invited to a follow-up by a physiotherapist 3 months after the admission, and results from functional tests including New Mobility Score (NMS) and Short Physical Performance Battery (SPPB) were recorded. Other outcomes were the rates of prosthesis dislocation, surgical site infections and 30-day mortality. Continuous outcomes were analyzed with linear regression, while dichotomous outcomes were analyzed with logistic regression and Fischer´s exact test.

Results

From September 2018 to November 2022, 858 cases were operated, 430 patients with the direct lateral approach and 428 patients with the SPAIRE approach. There were no differences between the groups in prosthesis dislocation (SPAIRE 0.7% vs direct lateral 0.9%, p=0.725), surgical site infections (SPAIRE 3.3% vs direct lateral 4.0% p =0.589) or 30-day mortality (SPAIRE 6.7% vs direct lateral 8.6 p=0.308). 43% of the patients had a 3-month follow-up (SPAIRE n=192; direct lateral n=180). At this time point, the SPAIRE group had better results in all outcome measures for physical function: NMS: 6.1 points in the SPAIRE group vs 5.0 in the lateral approach group (p<0.001), NMS change from preoperative: -1.3 vs -1.8 points (p=0.024), SPPB: 7.3 vs. 5.9 points (p<0.001), and preferred walking speed: 0.8 vs 0.7 m/s (p<0.001).

Conclusions

In this prospective register study, we found better functional outcome for patients operated with the SPAIRE approach compared to those operated with standard direct lateral approach, while there were no differences in post-operative complications. The low percentage of patients attending the 3-month follow-up and the observational design may have introduced biases, and a randomized, controlled study is warranted.

FP – 37

NON-REMOVAL OF INDWELLING URINARY CATHETER IS ASSOCIATED WITH IN-HOSPITAL DELIRIUM IN OLDER HIP FRACTURE PATIENTS

Maria Susanna Nuotio[1], Matias Pehkonen[1], Markus Tapani Hongisto[2]

1 Department of Geriatric Medicine, Turku University Hospital; Department of Geriatric Medicine, University of Turku, Turku Finland
2 Division of Orthopedics and Traumatology, Seinäjoki Central Hospital, Seinäjoki, Finland; Faculty of Medicine and Helath Technology, Tampere University, Tampere, Finland

Aims

Indwelling urinary catheters (IUC) are often used in medical and surgical inpatients during acute hospital care. In hip fracture patients, IUC is commonly placed on admission because of patient's pain and inability to mobilize. IUCs are known to carry a risk of catheter associated urinary tract infections. In hip fracture patients, prolonged IUC use has been associated with decline in mobility, increased need of more supported living arrangement and even increased risk of mortality. The aim of the study was to examine the association of non-removal of the IUC before discharge from the trauma ward with incidence of in-hospital delirium.

Methods

The data come from a prospective cohort study including 1403 hip fracture patients aged 65 years and over sustaining their first hip fracture during study period. Data were collected on IUC removal (yes or no) before discharge from the trauma ward. To detect delirium, the Confusion Assessement Method (CAM) was carried out by the orthopedic nurses. Of the patients, 764 (54%) with data on both IUC removal and CAM were eligible for analyses. Age-and multivariable adjusted logistic regression analyses were conducted with odds ratios (OR) and 95% confidence intervals (CI) to examine the associations of IUC removal with delirium. The covariates were age, gender, prefracture use of mobility aids, mobility level, living arrangements, prefracture diagnosis of cognitive disorder, American Society of Anesthesiologists (ASA) grade and number of prescribed medications on admission.

Results

The median age of the patients was 84 years (range 65 to 103 years) and 71% were women. The mean length of stay at the trauma ward was 5.5 days. Of all patients, delirium was detected in 30% (n=227) and IUC was removed before discharge in 71% (n=547). Of the patients with IUC not removed 41% vs 25% had delirium. In the age-adjusted analyses, age over 75 years or more, male gender,non-removal of IUC, non-independent mobility level and living arrangements, prefracture diagnosis of cognitive disorder and ASA grade 4-5 were significantly associated with in-hospital delirium. In the multivariable analysis, non-removal of the IUC was associated with in-hospital delirium (OR 1.70; 95% CI 1.20-2.42). Age 85 and over (OR 1.87;95% CI 1.03-3.39), male gender (OR 1.50;1.04-2.17), non-independent mobility level (OR 1.85;95% CI 1.23-2.76) and prefracture diagnosis of cognitive disorder (OR 1.82;95% CI 1.24-2.67) also remained associated with in-hospital delirium.

Conclusions

Non-removal of the IUC before discharge from the trauma ward is independently associated with in-hospital delirium in older hip fracture patients even when adjusting for other common risk factors for delirium such as prefracture diagnosis of cognitive disorder. The findings further emphasize the importance of adherence to the orthogeriatric care protocols advising prompt removal of IUC after hip fracture surgery in all patients.

FP – 38

DECISION-MAKING ON FRAGILITY FRACTURES OF THE PELVIC RING (FFP) REGARDING ROD AND SCREW PLACEMENT

Sheip Panev, Adrian Stützle, Christian Frank

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland

Aim

The objective was to improve patient safety and decision-making for operative treatment of the dorsal pelvic ring. Without intraoperative navigation or 3D imaging, we attempted to optimize the preoperative planning. The use of Syngo.Via® VB60HF5 (Siemens Healthineers), after CT scan for the assessment of fracture pattern and sacrum morphology was intended to facilitate the reliable identification of safe trajectories and anatomical landmarks for 2D operations under fluoroscopy.

Methods

Despite of contraindications, patients with FFP III and IV fractures were scheduled for surgical intervention. The decision to operate on patients with FFP II fractures was based on persistent pain and immobility. A preoperative assessment of the sacrum morphology was conducted using a CT scan and a two-dimensional multiplane reformation tool, Syngo.Via® in order to identify a safe corridor for an SI-rod (sacroiliac-rod) through navigation simulation. Simulating conventional lateral, inlet, and outlet images facilitated the identification of anatomical landmarks and safe trajectories. In the absence of a safe rod trajectory, a corridor for unilateral or bilateral SI screws was similarly planned by simulating the entry and exit points of each screw as described in the literature. The identification of the starting point and advancement of the guidewire were in accordance with the preoperative planning and followed by predrilling and placement of 7.5 mm cannulated screw/rod. Postoperatively, all patients underwent a CT scan to compare the planning with the operating result.

Results

From January 2023 to May 2024, we performed 55 stabilizations of the dorsal pelvic ring using the described technique (19 bilateral SI screws, 6 unilateral SI screws, 31 SI rods). The operative time was reduced by six minutes for a rod and 13 minutes for a screw (average duration 2023: 60 minutes per rod and 46 minutes per screw; 2024: 54 minutes per rod and 33 minutes per screw). The total operative time for an SI-stabilization procedure decreased from 76 minutes in 2023 to 44 minutes in 2024, representing a reduction of 32 minutes. The postoperative results demonstrated a strong correlation with the preoperative planning. Three patients exhibited partial malpositioning of the material (5.5%), while no patients exhibited neurologic deficiencies.

Conclusion

A software-based workflow that models standard CT data enables the simulation of intraoperative navigation and implant placement. Based on the observed complication rate, this method appears to be feasible and efficient. It is crucial to undertake a comprehensive preoperative planning of multiple alternative corridors. This enables intraoperative decision reevaluation and optimal placement of the material. Identifying the starting point is the most crucial part of the operation.

Reference

1. Krappinger D, Lindtner RA, Benedikt S. Preoperative planning and safe intraoperative placement of iliosacral screws under fluoroscopic control. Oper Orthop Traumatol. 2019 Dec;31(6):465-473.

FP – 40

IS DIRECT ANTERIOR APROACH THE BEST OPTION FOR FEMORAL NECK FRACTURE PATIENTS WITH SCHIZOPHRENIA?

Mehmet Suleyman Abul, Omer Faruk Sevim

Kartal City Hospital

Background

Femoral neck fractures, often treated surgically, present challenges, especially in schizophrenia patients who have unique perioperative needs and higher complication risks. This study examines total hip arthroplasty (THA) outcomes using direct anterior (DAA) versus posterior approaches (PA) in schizophrenia patients with these fractures. It aims to determine if DAA offers superior results, focusing on surgical outcomes, complications, recovery, and long-term follow-up, to guide clinical decisions for this specific population.

Methods

This retrospective comparative study assessed schizophrenia patients with femoral neck fractures treated with total hip arthroplasty (THA) using the same prosthesis model at a third-level trauma center. The study included patients with specific schizophrenia diagnostic codes confirmed by the psychiatric department. The sample comprised 11 patients (6 anterior approach, 5 posterior approach), with data collected on demographics, surgical details, and postoperative outcomes. Evaluations included Harris Hip Scores, dislocation, periprosthetic fractures, and aseptic/septic loosening, with follow-up from surgery to data collection.Postoperative outcomes showed that dislocation and other complications were recorded and analyzed using A-P pelvic radiographs at various intervals. Osteolysis and protrusion were evaluated based on specific criteria. Periprosthetic joint infection (PJI) was diagnosed according to MSIS criteria, requiring either two positive cultures, a sinus tract, or three minor criteria, including elevated CRP and ESR levels, increased synovial fluid white blood cell count, or a positive culture.

Results

We analyzed 11 schizophrenia patients who underwent total hip replacement between 2013 and 2022. Of these, 7 had surgery via the posterior approach and 5 via the direct anterior approach. The anterior approach showed a trend towards possible superior outcomes in terms of mechanical complications. However, analysis revealed no significant differences in demographic characteristics between the two groups. The average age and female-to-male ratio were similar across both groups. No significant difference was found in time from trauma to surgery, Harris Hip Scores, dislocation rates, periprosthetic fractures, or reoperation rates. Follow-up duration did not significantly differ between the groups.

Conclusions

Despite limitations such as a small sample size, our study suggests that the anterior approach may offer advantages over the posterior approach in THA for femoral neck fractures in patients with schizophrenia. Further research with larger sample sizes and longer follow-up periods is warranted to validate these findings and inform optimal surgical management strategies for this challenging patient population.

References

1. Frandsen JJ, Rainey JP, DeKeyser GJ, et al. Displaced Versus Nondisplaced Femoral Neck Fractures: Is Arthroplasty the Answer for Both? J Arthroplasty. 2023;38(7):S284-S288.

2. Liao CC, Shen WW, Chang CC, Chang H, Chen TL. Surgical Adverse Outcomes in Patients With Schizophrenia: A Population-Based Study. Ann Surg. 2013;257(3):433-438.

3. Menendez ME, Neuhaus V, Bot AGJ, Vrahas MS, Ring D. Do Psychiatric Comorbidities Influence Inpatient Death, Adverse Events, and Discharge after Lower Extremity Fractures? Clin Orthop Relat Res. 2013 Oct;471(10):3336-3348.

FP – 41

RETROSPECTIVE EVALUATION OF 1-YEAR MORTALITY IN PATIENTS OPERATED ON FOR HIP FRACTURE

Samet Bayram, Ali Geçer, Murat Kamiloğlu, Yağız Karpuz

University of Health Sciences, Haydarpaşa Numune Training and Research Hospital Orthopedics and Traumatology Clinic, Istanbul, Türkiye

Introduction

Our aim was to retrospectively analyse patients over 50 years of age who underwent surgery for hip fracture in our clinic between 2019 and 2023. In this study, factors influencing 1-year mortality were analysed. The average age of the 436 patients included in the study was 80 years, 118 were male and 318 were female. We analysed 433 fractures caused by low-energy trauma and 3 fractures caused by high-energy trauma.

Methods

Fracture types and surgical methods were determined, and preoperative waiting times, postoperative intensive care requirements, and hospital length of stay were evaluated. Comorbidities identified by cardiology and internal medicine consultations were also analysed. Data were compared for in-hospital, 1-month and 1-year mortality.

Results

No significant correlation was found between age and gender and in-hospital mortality, 1st month mortality and 1st year mortality rates ($p>0.05$). There was no significant relationship between fracture type and in-hospital mortality ($p>0.05$). However, there was a significant relationship between fracture type and 1st month mortality, with mortality being higher in patients with femoral neck fracture than pertrochanteric fracture ($p<0.05$). There was no significant relationship between fracture type and one-year mortality ($p>0.05$). The one-month and one-year mortality rates of patients who underwent partial prosthesis were significantly higher compared to other surgical methods(proximal femoral nail, cannulated screws, total hip prosthesis) ($p<0.05$). Prolonged preoperative waiting time was significantly associated with in-hospital, one-month and one-year mortality ($p<0.05$). A significant increase in in-hospital, 1st month and 1st year mortality was observed in patients requiring postoperative intensive care ($p<0.05$). There is a significant correlation between prolonged postoperative hospital stay and in-hospital mortality ($p<0.05$). There was a significant relationship between in-hospital, 1st month and 1st year mortality rates of patients with congestive heart disease ($p<0.05$). There was no significant association between diabetes and mortality rates ($p>0.05$).

Conclusion

In this study, we sought to determine the various factors affecting one-year mortality rates in elderly patients who had undergone surgery for hip fracture. Our findings indicate that fracture type, surgical method, preoperative waiting time, postoperative intensive care requirement and the presence of comorbidities play a significant role in determining mortality. In particular, femoral neck fracture and partial prosthesis applications were found to be associated with a high mortality risk. These findings emphasise the importance of early intervention and the selection of the appropriate surgical method in the treatment of fractures in elderly patients. In future studies, it is important to investigate these risk factors in larger patient groups and different populations in order to reduce mortality rates.

FP – 42

INTRAMEDULLARY NAILS FOR A1/2 HIP FRACTURES IN A HIGH VOLUME CENTRE YIELDS LOW MORTALITY AND LOW REOPERATION RATES

Fransiska Guerreiro, Ping Hei Cheng, Ahmed Farghaly, David Higgs, Simon Tilley

Southampton General Hospital

Introduction

Multiple papers have suggested that using Intramedullary Nails (IMN) for treatment of A1/A2 fractures is not justified due to increased risk of mortality in comparison to Dynamic Hip Screw (DHS). NICE Guidelines recommend extramedullary fixation due to lack of evidence of superiority of one over the other but with a cost difference. In our institution where the cost comparison is justified due to procurement cost banding, most patients with A1/2 fractures are treated with IMN. We reviewed the mortality rate and reoperation rate to compare our outcomes with the published data.

Methods

Retrospective review of patients receiving surgical fixation for extracapsular proximal femur fracture at Southampton General Hospital from 2020-2021 with data extracted from the National Hip Fracture Database (NHFD). The fracture radiographs were all separately classified by 3 trained orthopaedic doctors (SHO and registrars), with second opinions from 2 hip consultants where there was ambiguity. The hospital electronic patient records system database was interrogated for reoperation rate and mortality rate at 30 days and at 1 year.

Results

The mortality rate for IMN for A1/2 Fracture was 6.60% at 30 days, and 26.15% at 1 year. This compares favourably with multiple published results. The reoperation rate for A1/2 fracture treated with IMN was found to be 3.16%.

Conclusion

In a high volume institution where the IMN is commonly performed, both reoperation and mortality rates would appear to be low with the use of IMN's as opposed to DHS and compare favourably with both national and international publications.

References

1. National Institute for Health and Care Excellence. (2023). The management of hip fracture in adults [NICE Guideline No. 124]. https://www.nice.org.uk/guidance/cg124

2. Bjørgul, K., & Reikerås, O. (2007). Outcome after treatment of complications of Gamma nailing: A prospective study of 554 trochanteric fractures. Acta Orthopaedica, 78(2), 231–235.

3. Bojan, A. J., Beimel, C., Speitling, A., Taglang, G., Ekholm, C., & Jönsson, A. (2010). 3066 consecutive Gamma Nails. 12 years experience at a single centre. BMC Musculoskeletal Disorders, 11, 133.

4. Wolf, O., Mukka, S., Ekelund, J., Rogmark, C., Möller, M., & Hailer, N. P. (2022). Increased mortality after intramedullary nailing of trochanteric fractures: a comparison of sliding hip screws with nails in 19,935 patients. Acta Orthopaedica, 93, 146–150.

5. Whitehouse, M. R., Berstock, J. R., Kelly, M. B., Gregson, C. L., Judge, A., Sayers, A., & Chesser, T. J. (2019). Higher 30-day mortality associated with the use of intramedullary nails compared with sliding hip screws for the treatment of trochanteric hip fractures: a prospective national registry study. The Bone & Joint Journal, 101-B(1), 83–91.

FP – 43

EARLY PREDICTORS OF MORTALITY IN ELDERLY PATIENTS WITH HIP FRACTURE: LEUKOCYTE TO ALBUMIN RATIO AND SERNBO SCORE

Samet Bayram, Ahmed Uluç Yüksel, Murat Kamiloğlu, Ali Geçer

University of Health Sciences, Haydarpaşa Numune Training and Research Hospital Orthopedics and Traumatology Clinic, Istanbul, Türkiye

Aims

Hip fractures are a significant health concern in the elderly population, leading to high mortality rates and decreased quality of life. Accurate prognostic scores are crucial in predicting the outcomes and determining appropriate interventions for these patients. Therefore, this study aims to investigate the association between leukocyte count to albumin ratio on admission day and the "Sernbo score" for mortality within the one year after surgery in elderly patients with hip fractures.

Methods

Laboratory values for the 448 patients who have had a hip fracture and operated in our hospital between January 2019 and May 2024 collected retrospectively. Sernbo scores for these patients were collected while patients were getting admitted. Patients are classified according to their time of death after the initial surgery and excluded if it's more than one year. A total of 38 patients died within the one year from the initial surgery and 14 of them were within the first month.

Results

Mean Sernbo score for patients that were alive after one year is 16,009±3,303 and leukocyte to albumin ratio is 0,269±0,099. On the contrary it is 13,538±3,194 and 0,335±0,15 for the patients that died within the one year following the surgery respectively. It was observed that the mean Sernbo score and the mean leukocyte count to albumin ratio were negatively correlated in alive patients and patients who died within a year (Pearson correlation). When the average Sernbo scores of the alive and patients who died within a year were compared, it was determined that the Sernbo score of the alive group was significantly higher than the average of the deceased group, and the average leukocyte count to albumin was significantly higher in the group that died within a year than the alive group (student t test, $p<0.05$).

Conclusion

Our study showed that the leukocyte/albumin ratio was higher in patients who died within one year and had a negative correlation with the Sernbo score, which is used to evaluate one-year postoperative survival.

The underlying rationale for this relationship is that the leukocyte to albumin ratio serves as a proxy for the delicate balance between inflammation and nutritional status, both of which are critical determinants of clinical outcomes in elderly hip fracture patients. Hypoalbuminemia, as reflected in a higher leukocyte to albumin ratio, is a well-established marker of malnutrition and frailty, and has been independently associated with increased mortality risk in this population. Conversely, a high leukocyte count, often indicative of an ongoing inflammatory response, has also been linked to poorer prognosis in patients with hip fractures. By integrating these two parameters into a single metric, the leukocyte to albumin ratio appears to provide a more comprehensive assessment of the patient's overall clinical status.

FP – 44

TURKISH VALIDITY AND RELIABILITY OF THE SUNFRAIL SCALE

Cigdem Canbolat Seyman[1], Cigdem Kaya[2]

1 Hacettepe University, Faculty of Nursing, Surgical Nursing Department
2 Balıkesir University, Faculty of Health Sciences, Surgical Nursing Department

Aims

Frailty is a complex geriatric syndrome that develops as a consequence of age-related cumulative decline, where minor stressor events are associated with severe adverse health outcomes such as decreased physiological reserve, stress intolerance, slowness, weakness, low physical activity, and a decrease in body mass index, can even result in death. Therefore, determining frailty is crucial to preventing the elderly from encountering many complications. The current study aimed to translate, culturally adapt, and validate a Turkish version of the SUNFRAIL Scale in older adults.

Methods

This study follows a methodological approach. The original SUNFRAIL scale was translated into Turkish and cross-culturally adapted. Subsequently, the data from this version were tested for psychometric properties. We designed a cross-sectional study for data collection. The sample comprised 100 older adults. The content validity index was calculated. Construct validity was examined by determining the correlation between the SUNFRAIL scale and FRAIL questionnaire. Criterion validity for the SUNFRAIL tool was determined by establishing the correlations with chronic diseases, drug use, and level of dependence on mobilization.

Results

The Turkish version of the SUNFRAIL scale demonstrated psychometric properties similar to the original version. The translated questionnaire showed good internal consistency (Cohen's Kappa:0,69) and test-retest reliability (ICC:0.439). Additionally, significant correlations were found between the Turkish version of the SUNFRAIL scale and FRAIL questionnaire, chronic diseases, drug use, and level of dependence on mobilization.

Conclusions

The Turkish version of the SUNFRAIL scale is a valid and easy-to-use instrument for screening frailty in Turkish older adults.

References

1. Clegg, A., Young, J., Iliffe, S., Rikkert, M. O., & Rockwood, K. (2013). Frailty in elderly people. The Lancet, 381(9868), 752-762.

2. Maggio, M., Barbolini, M., Longobucco, Y., Barbieri, L., Benedetti, C., Bono, F., Cacciapuoti I., Donatini A., Iezzi E., Papini D, Rodelli P.M., Tagliaferri, S., Moro M.L (2020). A novel tool for the early identification of frailty in elderly people: the application in primary care settings. The Journal of Frailty & Aging, 9, 101-106.

3. Longobucco, Y., Lauretani, F., Gionti, L., Tagliaferri, S., Gobbens, R., Kostka, T., Palummeri, E., Barbolini, M., Maggio, M. (2022). The role of the Sunfrail tool in the screening of frailty and in integrated community-hospital care pathways: a retrospective observational study. Aging Clinical and Experimental Research, 1-9.

4. Gobbens, R. J., Maggio, M., Longobucco, Y., & Barbolini, M. (2020). The validity of the Sunfrail tool: a cross-sectional study among Dutch community-dwelling older people. The Journal of Frailty & Aging, 9, 219-225.

5. Cardoso, A. F., Bobrowicz-Campos, E., Teixeira-Santos, L., Cardoso, D., Couto, F., & Apóstolo, J. (2021). Validation and screening capacity of the European Portuguese version of the SUNFRAIL Tool for community-dwelling older adults. International Journal of Environmental Research and Public Health, 18(4), 1394.

6. Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. Biometrics, 159-174.

7. Lawshe, C. H. (1975). A quantitative approach to content validity. Personnel Psychology, 28(4), 563-575.

FP – 45

OPPORTUNITIES AND CHALLENGES FROM AI-ENABLED VERTEBRAL FRACTURE IDENTIFICATION FOR FLSS: THE ADOPT STUDY

Muhammad Kassim Javaid[9], D Chappell[1], V Sanders[1], M Vindlacheruvu[1], J Boylan[2], J Turton[2], M Sampson[3], A Guy[3], R Eckert[4], E Curtis[5], M Stone[2], F Cooper[6], Y Kimmel[7], K Poole[1], O Sahota[8], J Conner[10], J Threlkeld[10], C Chisholm[10]

1 Cambridge University Hospitals NHS Foundation Trust
2 Cardiff and Vale University Health Board
3 University Hospitals Southampton Foundation Trust
4 Oxford University Hospitals NHS Foundation Trust
5 MRC Lifecourse Epidemiology Centre, University of Southampton
6 Royal Osteoporosis Society
7 Nano-X Imaging Ltd
8 Nottingham University Hospitals NHS Trust
9 University of Oxford
10 Bradford Teaching Hospitals NHS Foundation Trust

Objective

To assess the real-world effectiveness of AI-enabled vertebral fracture (VF) identification in the FLS setting.

Methodology

The Nanox HealthVCF AI model was implemented in four NHS hospitals in England and Wales. After local information governance approval, clinical validation was conducted at each site using 500 consecutive CT scans, before the algorithm was used in routine clinical practice. FLS-A opted for live augmented radiology reporting where the AI-prioritised scans were flagged to the reporting radiologist to confirm and then use a standard shortcode phrase that led to a referral of the patient to the local FLS. The remaining three FLSs analysed AI-prioritised scans separately from the standard radiology reporting pipeline, for clinical confirmation and ongin FLS management. Local service improvement teams that included at least 3 patient representatives, reviewed and improved the FLS patient pathways. We compared the additional number of patients that would be expected to require FLS assessment with the total number of patients seen by the FLS in the previous 12 months using the Fracture Liaison Service Database of England and Wales, 2022.

Outcomes

After local clinical validation, FLS-A chose the high specificity (98.0%) mode to minimize false positive scans, while the other sites chose a balanced mode with a higher sensitivity (87% vs 59%). The number of CT scans reviewed by the AI in 4 months varied from 3,298 to 20,239, with 12.4% to 40.6% of scans flagged for review. The number of clinically positive scans requiring FLS review varied from 221 in FLS-A and 282 to 3,575 in the other FLS. This represented a 134% to 249% expected increase in patient numbers for FLSs. The local improvement teams identified issues, including criteria to filter patients not requiring further FLS assessment, invitation letters to patients, monitoring pathways and digital tools to reduce administration time.

Conclusion

Incorporating AI to identify VFFs significantly increased patient identification. It also underscored specific areas in the local FLS pathway that required improvement if FLSs are to realize anticipated improvements from AI on patient outcomes fully.

Reference

1. https://www.fffap.org.uk/FLS/charts.nsf/benchmarks?ReadForm&yr=2022&vw=BYO&org1=SGH,BRD,ADD,LLD

FP – 46

IMMINENT HIP FRACTURES IN FLS PATIENTS – LINKAGE OF THE NATIONAL FLS AND HIP FRACTURE DATABASES OF ENGLAND AND WALES

Muhammad Kassim Javaid[1], Roshi Shrestha[1], Zaineb Mohsin[1], Antony Johansen[3], Celia Gregson[4], Rosie Dickinson[2], Rafael Pinedo-Villanueva[1]

1 NDORMS, University of Oxford, UK
2 Falls and Fragility Fracture Audit Programme, Royal College of Physicians, London, UK
3 University Hospital of Wales and School of Medicine, Cardiff University, UK
4 Musculoskeletal Research Unit, Bristol Medical School, University of Bristol, UK

Introduction

Fracture Liaison Services (FLSs) are expected to reduce fracture risk in adults with recent fragility fractures. However, there are few real-world data determining whether particular subgroups of patients remain at high imminent fracture risk even after FLS management and how this relates to the quality of an FLS.

Methods

Patient records from the National Hip Fracture (NHFD) and Fracture Liaison Service (FLSDB) databases of England and Wales from 01.01.2017 to 31.12.2020 were linked to identify a cohort of adults with an index hip, spine or other fracture in 2018 excluding fractures within 7 days to exclude potential duplicate records. K-means was used to group FLSs based on their 2018 FLSDB key performance indicators (KPIs) results. Sites that did not participate in the FLSDB in 2018 were identified in a 'non-participating' cluster. Kaplan Meier hierarchical survival analyses described the rates and determinants of subsequent hip fractures recorded in the NHFD over the next 2 years to account for clustering within hospital and excluded hip fractures that were within 3 months of the index fracture date. Female, other fracture sites and alendronate use were the referent groups.

Results

A cohort of 11,277 hip, 4,032 spine and 44,863 other fractures from the FLSDB and 50,490 hip fractures from the NHFD were identified. Four clusters of FLSs were identified using the KPI: 1. Low identification, rapid assessment, moderate DXA and high monitoring (n=22); 2. low identification, slow assessment/DXA and low monitoring (n=21); 3. moderate identification, low spine identification rapid assessment, slow DXA, high recommendation and no monitoring (n=10); 4. hi identification, hi spine identification, rapid assessment, moderate DXA, moderate monitoring (n=5). The risk of a subsequent hip fracture was highest for cluster 2 (2.64%) and lowest for cluster 4 (1.86%) (p=0.001) and 182 (0.36%) for the NHFD only hip fractures. The differences between cluster remained significant after adjusting for age and sex. In the FLSDB only model, the risk of hip fracture was higher by: age (years: OR 1.06 (1.05-1.07)); index hip (OR 1.8 (1.58 – 2.14)) and spine (1.36 (1.06-1.77)) and treatment recommendations of zoledronate (1.5 (1.13-2.00)). These findings were similar after excluding hip fractures within 30 days of the index fracture.

Conclusion

These findings identify a cohort of FLS patients remaining at high imminent hip fracture risk highlighting the need to consider service improvement and more potent anti-osteoporosis management strategies that rapidly decrease of subsequent hip fracture risk.

FP – 47

RECURRENT FALLS IN A 96-YEAR-OLD: A SAGA OF INAPPROPRIATE MEDICATION FROM NORTH INDIA

Gaurav Sharma[1], Anup Singh[1], Sankha Shubhra Chakrabarti[1], Upinder Kaur[2], Sumit Jaiswal[1]

1 Department of Geriatric Medicine, Institute of Medical Sciences, Banaras Hindu University, Varanasi
2 Department of Pharmacology, Institute of Medical Sciences, Banaras Hindu University, Varanasi

Falls and fall-related injuries are significant contributors to increased mortality and morbidity among the elderly. Many incidents go unnoticed, and sometimes the causes are not immediately apparent.

This case involves a 96-year-old male with multiple comorbidities who experienced a total of four falls over the past two years. These falls had led to a left patellar fracture, a collapse of the first lumbar vertebra, and a head injury, hampering his mobility and ultimately resulting in him becoming bedridden. The patient's drug history included the introduction of multiple medications, including antipsychotics, antiparkinsonian drugs, and acetylcholinesterase inhibitors within the last 6 months, a total of 11 pills. Coexisting delirium secondary to a urinary tract infection was treated with antibiotics. Stepwise tapering of neurotropic drugs was done, and delirium preventive strategies with multimodal exercises were implemented and practiced.

On follow-up, the patient had improved sensorium and could perform all activities of daily living, including most instrumental activities. During the comprehensive fall assessment, it was noted that inappropriate medication, despite being a significant risk factor, is often overlooked.

FP – 48

FALL PREVALENCE AMONG ELDERLY PEOPLE IN NORTHERN CYPRUS AND ASSOCIATION BETWEEN INTRINSIC RISK FACTORS AND FALLS

Hatice Hacıküçük, Emine Handan Tüzün, Levent Eker

Eastern Mediterranean University

Introduction

Falls are an important health problem in elderly community-dwelling people. This study examines the prevalence of falling among the 65-and-older population who lived in the community in Northern Cyprus and assess the association between intrinsic risk factors and falls.

Materials and Method

This cross-sectional and nested case-control study was carried out in 16 villages belongs to Değirmenlik Municipality in Northern Cyprus. The descriptive characteristics of participants were collected using a standardized, semi-structured questionnaire. Guides and forms prepared by the STEADI program of the Centers for Disease Control and Prevention were used to evaluate the association between intrinsic risk factors and falls.

Results

The participation rate in the study was 80.8%. The overall prevalence of falls in the past year was 40.7%. The prevalence of falls was not significantly different among men (41.0%) and women (40.4%). Those who have some level of fear of falling, and the impaired motor function associated with cognitive impairment, polypharmacy, impaired balance, endurance and strength, orthostatic hypotension, living alone, having depressive symptoms, and older age are associated with an increased likelihood of falling.

Conclusion

Falls are an important health problem in elderly community-dwelling people in Northern Cyprus. The results of this research will assist community, health leaders and health care professionals who work on geriatrics in developing more efficacious intervention strategies to prevent or reduce falls. Identification of individual-level risk factors can increase the likelihood of selecting an appropriate prevention strategy.

FP – 49

FRAILTY ACCORDING TO THE SWHI TOOL PREDICTS FALLS AND HIP FRACTURE OCCURRENCE IN THE SHARE DATABASE

Paolo Mazzola[1,3], Martina Manna[1], Giulia Caggiu[1,2], Matteo Monzio Compagnoni[2]

1 University of Milano-Bicocca, School of Medicine and Surgery, Monza (MB), Italy
2 University of Milano-Bicocca, Department of Biostatistics and Quantitative Methods, Milano (MI), Italy
3 Fondazione IRCCS San Gerardo dei Tintori, Acute Geriatrics Unit, Monza (MB), Italy

Aims

Frailty is a common condition in the aging population, and subtly presents with an increased vulnerability to endogenous and exogenous stressors that leads to poor health outcomes. The prevalence of frailty is different across healthcare settings, and many screening tools have been proposed for its assessment. While frailty is certainly evident in clinical settings, especially in the acute care one, identifying frailty among community-dwellers is more challenging. Moreover, implementing assessment strategies for this syndrome by general practitioners (GPs) is considered problematic due to the workload and time constraints typical of the community setting.

Methods

We explored the database of the Survey of Health, Ageing and Retirement in Europe (SHARE), focusing on subjects interviewed in Wave 8 (2020). According to the operational definition of frailty given by the Simplified sWHI tool (total score 0 to 5), focused on 4 variables: amount of time feeling limited in activities (score 0-2), frequency of feeling tired (0-1), number of times a week practicing activities that require a moderate amount of energy (0-1), and weight loss >4 kg (0-1). We obtained three categories according to the total sWHI score, namely frail (sWHI>3), pre-frail (sWHI 1 or 2), and non-frail subjects (sWHI=0, reference category). The characteristics of the study population were expressed in terms of demographics, functional status, comorbid conditions and medications. Main outcomes were hip fracture occurrence and episodes of fall in the last 6 months, assessed at Wave 9 interviews (2023).

Results

The study population included 31,471 subjects at Wave 8, with no missing values for variables needed to assess frailty. The mean age of the sample was 71.2 years (Standard Deviation 9.5 years). According to the sWHI score, we categorized 10,242 subjects as non-frail (32.5%), 15,435 as pre-frail (49.1%), and 5,139 as frail (16.3%). At Wave 9, episodes of falls were significantly more frequent in pre-frail (9.4%) and frail subjects (23.9%) compared to non-frail ones (4.6%, $p<0.001$), with a similar trend observed for hip fracture occurrence (2.2% in pre-frail, 5.6% in frail subjects) compared to non-frail ones (1.0%, $p<.001$). Interestingly, also the episodes of dizziness/faints, as well as experiencing fear of falling in the last 6 months, were more prevalent among pre-frail and frail subjects vs. non-frail ones. Logistic regression analyses showed increased Odds Ratios for experiencing falls and hip fractures in pre-frail and frail subjects vs. non-frail ones (reference group).

Conclusions

The sWHI tool, adapted for variables collected in the SHARE database, represents a quick tool for frailty assessment, not requiring knowledge about the subjects' entire medical history. Despite being self-reported, it is easily applicable by GPs for frailty screening and to subsequently promote preventive strategies to counteract the negative effects of this syndrome on health outcomes.

References

1. SHARE-ERIC (2024). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 8. Release version: 9.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w8.900

2. SHARE-ERIC (2024). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 9. Release version: 9.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w9.900

3. Börsch-Supan, A., M. Brandt, C. Hunkler, T. Kneip, J. Korbmacher, F. Malter, B. Schaan, S. Stuck, S. Zuber (2013). Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). International Journal of Epidemiology; 42(4):992-1001.

4. Bergmann, M. and A. Börsch-Supan (Eds.) (2021). SHARE Wave 8 Methodology: Collecting Cross-National Survey Data in Times of COVID-19. Munich: MEA, Max Planck Institute for Social Law and Social Policy.

5. Bergmann, M., M. Wagner and A. Börsch-Supan (Eds.) (2024). SHARE Wave 9 Methodology: From the SHARE Corona Survey 2 to the SHARE Main Wave 9 Interview. Munich: SHARE-ERIC. DOI: 10.6103/mv.w09.

6. Hausstein, B., Schleinstein, N., Koch, U., Meichsner, J., Becker, K. & Stahn, L.-L. (2014). da|ra Metadata Schema. Version: 3.0. GESIS Leibniz Institute for the Social Sciences. DOI: 10.4232/10.mdsdoc.3.0

7. DataCite Metadata Working Group (2013). DataCite Metadata Schema for the Publication and Citation of Research Data. Version 3.1. DataCite. Text. DOI: 10.5438/00010

8. Zaslavsky O, et al. J Gerontol A Biol Sci Med Sci. 2017;72(10):1394-1400. doi: 10.1093/gerona/glx080

FP – 50

FRAGILITY FRACTURE SERVICES MAY REDUCE THE INCIDENCE OF MAJOR TRAUMA DUE TO LOW-ENERGY INJURY IN OLDER PEOPLE

Fransiska Guerreiro, Mark Baxter, Simon Tilley

Southampton General Hospital

Aims

Major trauma due to low-energy injury (MTLE) in the elderly population has become more common with higher mortality and morbidity. Fragility fracture prevention is known to provide a significant cost-saving to the healthcare system. This study analyses the incidence of prior fragility fracture or osteoporosis in the elderly population who subsequently sustained a low-energy major trauma event to review whether fragility fracture prevention could reduce the incidence on MTLE patients.

Methods

The Trauma Audit & Research Network (TARN) database retrospective review on patients more than 65 years old with an Injury Severity Score (ISS) of more than 15 after a low energy injury, between 1 January 2021 to 31 December 2022 in a regional major trauma centre. Electronic health records were interrogated for evidence of previous fragility fracture, diagnosis of osteoporosis, and Fracture Liaison Service (FLS) review.

Results

254 patients were included in the final analysis. There is an incidence of 22% of older patients presenting with major trauma who have a history of osteoporosis or fragility fracture. There is low proportion of patients with previous FLS review, 8 patients (3%). 31 patients had fragility fractures, no diagnosis of osteoporosis and no FLS review. This group has a high mortality rate which could potentially be improved with FLS review at their index fragility fracture.

Conclusion

There is a potential to reduce the mortality and morbidity and risk of major trauma by intervening at the time of index or initial fragility fracture with FLS review. The assessment by this service also incorporates multifactorial review which is a holistic approach to potentially change some of the modifiable risks that the group carries. Outcome improvement in FLS has been shown to reduce subsequent fractures, improve quality of life, reduce hospital bed days, avoid surgeries, avoid institutionalisation, and reduction of cost.

FP – 51

EFFECT OF TRAINING ON FRAILITY LEVEL, CARE DEPENDENCE AND FEAR OF MOVEMENT IN HIP SURGERY PATIENTS: RCT

Halise Çinar[1], Nurdan Gezer[1,2]

1 Aydin Adnan Menderes University, Söke Health Services Vocational School, Aydin, Türkiye
2 Aydin Adnan Menderes University, Faculty of Nursing, Aydin, Türkiye

Aims

This research aimed to evaluate the impact of education based on the fracture liaison service model on fragility levels, care dependency, and fear of movement in hip surgery patients.

Methods

The research was conducted as a pre-test post-test control group experimental randomized controlled study with 74 patients who underwent hip surgery in a hospital in the Aegean region of Türkiye between October 2022 and June 2024. Research data were collected using a Personal Information Collection Form and a Patient Follow-up Form prepared by the researcher, Edmonton Frail Scale, Kinesiophobia Causes Scale, and Care Dependency Scale prepared by the researcher. The normal distribution assumption of the quantitative variables included in the research was checked with the Kolmogorov-Smirnov test. Descriptive statistics were given as mean ± standard deviation for quantitative variables and frequency (%) for categorical variables. Independent samples t-test was used in independent group comparisons. Repeated measures analysis of variance (ANOVA) was used for comparisons of repeated measurements within groups. Independence between categorical variables was examined with the chi-square test. Results were considered statistically significant at a 95% confidence interval with a p-value less than 0.05.

Results

No statistically significant difference was found between the control and intervention groups regarding descriptive characteristics, health status, presence of complications, and detected problems. Both groups were normally distributed. The Edmonton Frailty Scale mean scores of the intervention group on the 3rd day, 3rd week, and 3rd month were significantly lower than those of the control group ($p<0.05$). The mean scores of the Kinesiophobia Causes Scale Biological Domain sub-dimension for the intervention group on the 3rd day, 3rd week, and 3rd month were significantly lower than those of the control group ($p<0.05$). The mean scores of the Kinesiophobia Causes Scale Psychological Domain sub-dimension for the intervention group on the 3rd day, 3rd week, and 3rd month were significantly lower than those of the control group ($p<0.05$). Additionally, the mean scores for the overall Causes of Kinesiophobia Scale for the intervention group at the same time points were significantly lower than those of the control group ($p<0.05$). Furthermore, the mean Care Dependency Scale scores of the intervention group on the 3rd day, 3rd week, and 3rd month were significantly higher than those of the control group ($p<0.05$).

Conclusions

This study revealed that education aligned with the fracture liaison service model effectively reduced patients' frailty, fear of movement, and care dependency.

FP – 52

THE PREVALENCE OF RE-HOSPITALIZATION AND MORTALITY AFTER FRAGILITY HIP FRACTURE: A RETROSPECTIVE STUDY

Ayse Gul Atay Doygaci[1], Cigdem Kaya[2], Cigdem Canbolat Seyman[3], Bahtiyar Haberal[4]

1 Baskent University, Vocational School of Health Services, Program of Operating Room Services
2 Balıkesir University, Faculty of Health Sciences, Nursing Department
3 Hacettepe University, Faculty of Nursing, Surgical Nursing Department
4 Baskent University, Faculty of Medicine, Department of Orthopedics and Traumatology

Aims

Fragility fractures, which result from low-energy trauma such as a fall from standing height or less, are a sign of underlying osteoporosis. The most frequent fractures occur at the hip, spine, and forearm. Hip fractures, in particular, account for much of the fracture-related mortality and health care expenditures, among older adults, and are considered the most serious type of fracture. Fragility hip fractures have major consequences on patients' quality of life as they cause substantial pain and disability, leading to a loss of independence and an increased risk of readmission, morbidity, and mortality. This study aims to determine the prevalence of re-hospitalization and mortality in patients who have suffered fragility hip fractures.

Methods

This descriptive, retrospective study conducted with 171 patients who were treated in our center for fragility hip fractures in the last two years. Data were collected from hospital archive and electronic medical records. This study was approved by the Clinical Research Ethics Committee of Başkent University Hospital (No: E-94603339-604.01-350667) and was conducted in accordance with the Helsinki Declaration.

Results

In our study, 68.9% of the participants were female, with a mean age of 78.47 years and a mean BMI of 26.06. 54.4% of the patients are in ASA class III, and 42.7% of them have an Modified Charlson Comorbidity Index between 4-5 point. Although 88.9% of the patients had chronic diseases, only 7.8% were diagnosed with osteoporosis, and 6.7% received osteoporosis medication. A previous history of fractures was present in 8.9% of the patients. Among those with hip fractures, 88.3% were caused by falls, resulting in 47.2% femoral neck fractures, 47.2% pertrochanteric fractures, and 5.62% subtrochanteric fractures. Treatments included total joint replacement in 47.2% of cases and internal fixation and nailing in 52.8%. Patients stayed in the hospital for an average of 5.6 days, with 27.8% requiring intensive unit care. After discharge, 37.8% were readmitted, of whom 94.4% were discharged again, and 5.6% died.

Conclusion

Frailty has been shown to contribute to adverse outcomes after hip fractures. Therefore, identifying frailty in elderly patients and implementing effective strategies to prevent hip fracture, as well as improving standards of care, will be important steps towards reducing rehospitalization and mortality in patients with hip fracture.

References

1. Kleiven S. Hip fracture risk functions for elderly men and women in sideways falls. J Biomech. 2020;105:109771.

2. Wiklund R, Toots A, Conradsson M, Olofsson B, Holmberg H, Rosendahl E, et al. Risk factors for hip fracture in very old people: a population-based study. Osteoporos Int. 2016;27(3):923-31.

3. Groff H, Kheir MM, George J, Azboy I, Higuera CA, Parvizi J. Causes of in hospital mortality after hip fractures in the elderly. Hip Int. 2020;30(2):204-9.

4. Gleason LJ, Benton EA, Alvarez-Nebreda ML, Weaver MJ, Harris MB, Javedan H. FRAIL questionnaire screening tool and short-term outcomes in geriatric fracture patients. J Am Med Dir Assoc. 2017;18(12):1082-6.

5. Zhang X, Liu Y, Van der Schans CP, Krijnen W, Hobbelen JSM. Frailty among older people in a community setting in China. Geriatr Nurs. 2020;41(3):320-4.

FP – 53

HIP AIRBAGS: FRIEND OR FOE? REPORT OF A WEARABLE HIP AIRBAG CONTRIBUTING TO A SERIOUS ADVERSE EVENT IN AN OLDER ADULT

Emma Skelly[1], Rob Argent[1], David Williams[1], Opinder Sahota[3], Frances Dockery[2,1]

1 Royal College of Surgeons in Ireland, Dublin, Ireland
2 Beaumont Hospital, Dublin, Ireland
3 Queens Medical Centre, Nottingham University Hospitals NHS Trust, UK

Background

Despite numerous effective interventions to reduce falls risk, many older people will continue to fall therefore far greater focus on injury prevention is needed. The use of traditional hip protectors was one such strategy, however they are seldom-used due to their uncomfortable design. Wearable hip airbags are belt like devices containing an accelerometer to detect falls with an inflatable airbag which inflates in the event of a sideways fall. These cleverly-designed devices have great potential use in high risk fallers however they have not been evaluated in clinical trials though are available for sale to the public. We report on one study participant who sustained a serious injury while wearing one such device.

Methods

An 83 year old female was recruited to a clinical trial exploring the acceptability of hip airbags in community dwelling older adults. Written informed consent was gained, and the study approved by regional Ethics committee. The participant had a marked fear of falling and a cerebrovascular disease gait pattern but had no reported falls in the preceding year. She was cognitively intact. Her waist: hip ratio was 1.08. She was randomly assigned to wear a Hip'Guard airbag (Helite, France). This commercially-available device is designed to be worn as a belt around the waist in the region of the umbilicus, held in place by a snap buckle. Fitting of the device was demonstrated to the participant by the researchers, then fitted independently by the participant under supervision by the researchers to ensure ability to use the device correctly. All was in accordance with manufacturer's instructions.

Clinical course

Three days following initial fitting, the airbag hip airbag belt appears to have been fitted by the participant in the incorrect position below her waist or had slipped downwards without her realisation. It was observed by a passerby to be falling down her thighs as she walked outdoors, impeding her stride and resulted in a fall. She sustained a distal femur fracture. The belt was described as positioned above her knees as she lay on the ground, with the snap buckle still closed. The fracture was successfully repaired with external fixation however the post-operative clinical course was complicated by delirium, ileus and prolonged hospitalisation.

Conclusions

This case highlights the risk of hip airbag belts if incorrectly applied, and that their use in people with a high waist to hip ratio may be particularly hazardous due to slippage risk. This device appears unsafe in such people until design alteration to mitigate against slippage risk.

FP – 54

PROXIMAL HUMERUS FRACTURES IN IRISH PATIENTS ≥60 YEARS; SIGNIFICANT PREDICTORS OF SUBSEQUENT FRACTURE AND MORTALITY

Kate Somers[1,2], Aaron Glynn[2]

1 Royal College of Surgeons, Ireland (RCSI)
2 Our Lady of Lourdes Hospital, Drogheda, Ireland

Background

Proximal humerus fractures (PHFs) account for over 10% of all fractures in adults ≥60-years old (1), and rank as the third most common osteoporotic fracture (2) worldwide. They are well-established fragility fractures of the elderly, with significant impacts on patient morbidity and mortality. Despite this, there is a paucity of Irish data outlining the impact of these fractures on our population and healthcare system. The incidence of PHFs, like all osteoporotic fractures, are projected to continue rising over the coming decades (3), in line with our aging population.

Aims

The aim of this study was to quantify the additional risk of mortality and subsequent hip fracture assumed by patients in the years following PHF, compared to national rates in the Irish population.

Methods

A retrospective cohort study was conducted. All patients (≥60 years) in our catchment area who sustained PHFs in 2016 were included. This comprised 217 patients, with mean follow-up of 5.24 years. Incidence rates for subsequent major falls, fragility fractures, and mortality were calculated for comparison to national rates reported accross the Irish population. Cox regression was used to determine predictors of mortality.

Results

Over the follow-up period, 70.2% (n=151) of PHF patients presented to hospital with a major fall, 46.1% (n=99) sustained a subsequent fracture, and 13.7% (n=29) sustained a hip fracture. The incidence rates of these events were 13.4, 8.79 and 2.69 per-100-person years, respectively. The rate of hip fracture was seven times that of national reported rates (RR:7.01; 95% CI: 6.37-7.66). In particular, the younger cohort of patients (aged 60-69) incurred the greatest relative risk, with a 9-fold increase compared to national rates in the 5 years following fracture. One-year mortality was 9.68% (n=21), and total follow-up mortality was 46.5% (n=101). The Standardized Mortality Rate (SMR) was 3.21 for the first year following injury, and 2.79 over the full study follow-up.

Conclusion

This study highlights the significance PHFs as indicators for predicting adverse events and increased mortality in patients ≥60 years. The markedly elevated rate of subsequent hip fracture in this patient cohort is concerning. However, this observation also presents an opportunity to evaluate current practices and introduce preventive measures specifically targeting these patients in the future. As Ireland's population continues to age, optimising the management of these common osteoporotic injuries is crucial to ensure the most efficient allocation of healthcare resources, and most importantly, to ensure better outcomes for patients.

References

1. Court-Brown CM, Caesar B. Epidemiology of adult fractures: A review. Injury 2006;37(8):691-97. doi: 10.1016/j.injury.2006.04.130

2. Launonen AP, Lepola V, Saranko A, et al. Epidemiology of proximal humerus fractures. Archives of Osteoporosis 2015;10(1):1-5. doi: 10.1007/s11657-015-0209-4

3. Rupp M, Walter N, Pfeifer C, et al. The incidence of fractures among the adult population of Germany - An analysis from 2009 through 2019. Deutsches Arzteblatt International 2021;118(40):665-69. doi: 10.3238/arztebl.m2021.0238

FP – 55

DETERMINANTS OF DELAYED DISCHARGES IN PATIENTS WITH PERTROCHANTERIC FRAGILITY FRACTURES: A RETROSPECTIVE COHORT STUDY

Muhammed Yusuf Afacan, Cumhur Deniz Davulcu

Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Orthopaedics and Traumatology, Istanbul, Türkiye

Aim

Fragility-related pertrochanteric fractures have emerged as a significant public health concern, with their incidence increasing due to the expanding elderly population. The aim of this study is to identify and analyze the factors contributing to delayed discharges in patients with pertrochanteric fragility fractures, with the goal of enhancing healthcare delivery and improving patient outcomes.

Methods

A retrospective analysis was conducted on patients aged 65 and older with pertrochanteric fragility fractures. Exclusion criteria included patients with high-energy trauma, pathological fractures other than osteoporotic in nature. Comprehensive data were collected from medical records and included demographic information, comorbidities, fracture characteristics, and preoperative status. Information on perioperative management was gathered, including the type of surgical procedure performed, timing of surgery from admission, anesthesia type, intraoperative complications, and blood loss. Postoperative complications were also recorded, encompassing both medical and surgical. Details on discharge planning included the anticipated discharge destination, social support systems, physical therapy involvement, and discharge delays along with their causes. Specific focus was placed on identifying barriers to timely discharge. The primary outcome was the length of hospital stay. Secondary outcomes included readmission rates within 30 days post-discharge, mortality rates within 90 days, and functional outcomes.

Results

The study included 100 patients with pertrochanteric fragility fractures. The mean length of hospital stay was 15 days. Delayed discharges were observed in 80% of patients. Factors significantly associated with delayed discharges included advanced age ($p=0.03$), presence of multiple comorbidities ($p<0.001$), preoperative functional impairment ($p=0.01$), postoperative complications ($p<0.0001$), and lack of appropriate post-discharge support ($p=0.001$). Women stay significantly longer in the hospital then men ($p=0.02$). Multivariable analysis identified advanced age, comorbidities, preoperative functional impairment, postoperative complications, and inadequate post-discharge support as independent predictors of delayed discharge.

Conclusion

This study identified advanced age, multiple comorbidities, preoperative functional impairment, postoperative complications, and lack of appropriate post-discharge support as significant factors contributing to delayed discharges in patients with pertrochanteric fragility fractures. These findings highlight the need for targeted interventions to address these factors, thereby optimizing healthcare delivery and improving patient outcomes. Comprehensive geriatric assessments, early identification of high-risk patients, and multidisciplinary discharge planning are essential to minimize delays and improve outcomes in this vulnerable population.

FP – 56

IN-HOSPITAL HYPERNATREMIA BEFORE DISCHARGE TO PRIMARY CARE WARDS PREDICTS 90-DAY MORTALITY IN HIP FRACTURE PATIENTS

Matias Pehkonen[1,2], Päivi Korhonen[3], Sanna Collin[3], Maria S Nuotio[1,2]

1 University of Turku, Department of Clinical Medicine, Geriatric Medicine
2 Turku University hospital, Geriatric Medicine
3 University of Turku, Department of General Pracitce

Aims

Hypernatremia is found in 1,5 % to 3 % of hip fracture patients (1). In the few previous studies available on the subject, it has been associated with increased postoperative mortality, especially if it remains uncorrected before transfer to post-acute care facilities (1,2). Discharge from the operating hospital is a critical time point in the care pathway of geriatric hip fracture patients, and post-acute care facilities often have less monitoring possibilities. Active medical issues such as electrolyte disturbances should be treated before transfer. We studied the impact of in-hospital hypernatremia on the 90-day mortality of older hip fracture patients transferred to primary health care wards.

Methods

A register-based retrospective study population of 2240 hip fracture patients from 2015 to 2019 was collected. In the present study we included patients aged ≥65 years who were transferred from the operating hospital to primary health care wards after surgery (n=1,125). Baseline variables included in the study were age, gender, American Society of Anesthesiologists (ASA) grade, delay from admission to surgery, length and type of surgery, fracture type, and length of stay at the operating hospital. Laboratory results of plasma sodium were collected on admission and before discharge.

Mortality curves were plotted using the Kaplan–Meier method and the log-rank test was used to analyze the statistical differences between groups. We investigated crude mortality and mortality by gender at 90 days post-fracture. The main outcome was mortality at 90 days, adjusted with age, sex, and ASA grade. A possible nonlinear relationship between 90-day mortality and the sodium level was assessed by using 3-knot restricted cubic spline logistic regression model. Receiver operating characteristic (ROC) curve was used for the determination of thresholds for the sodium levels to predict mortality. The best cutoff value (144 mmol/l) was defined as the value with the highest accuracy that maximizes the Youden's index.

Results

This hip fracture cohort consisted of 784 women (69,7 %) and 341 men (30,3 %). Mean age in women was 84 years and in men 81 years. Hypernatremia, defined as serum sodium ≥144 mmol/l, was present in 8.5 % (n = 114) of the patients on admission and in 6.8 % (n = 91) before discharge. For patients with in-hospital hypernatremia the crude mortality at 90 days was 35.8 % (95 % CI 27.1 to 46.3) and for patients with normal serum sodium 9.6 % (95 % CI 8.0 to 11.6). The age- and sex-adjusted hazard ratio of in-hospital hypernatremia compared to normal serum sodium was 3.91 (95 % CI 2.62 to 5.82).

Conclusions

In-hospital hypernatremia had predictive value for 90-day mortality. We recommend active screening for and prompt treatment of perioperative hypernatremia in hip fracture patients. Local guidelines and discharge checklists are recommended to secure the discharge period.

References

1. Madsen, C. M., Jantzen, C., Lauritzen, J. B., Abrahamsen, & B., & Jorgensen, H. L. (2016). Hyponatremia and hypernatremia are associated with increased 30-day mortality in hip fracture patients. Osteoporosis Int, 27, 397–404.

2. Thongprayoon, C., Cheungpasitporn, W., Petnak, | Tananchai, Miao, J., & Qian, | Qi. (2021). Increased short-term and long-term mortality in community-and hospital-acquired hypernatraemia and in patients with delayed serum sodium correction. Int J Clin Pract, 75.

FP – 57

PROXIMAL HUMERUS FRACTURES OPERATED WITH ANATOMICAL LOCKING PLATE: MINIMUM 13 YEARS CLINICAL AND RADIOLOGICAL FOLLOW-UP

Olgar Birsel[1], İlker Eren[1], Mehmet Chodza[2], Mehmet Demirhan[1]

1 Koç University School of Medicine
2 Istanbul American Hospital

Background

Proximal humeral fractures account for 5% of all fractures in adults, with 15-30% undergoing surgical treatment. Anatomical locking plates are the gold standard for osteosynthesis, but concerns persist about high complication rates and potential functional limitations despite bone healing. Recognizing the lack of long-term outcome data, our study aims to explore both functional and radiological results after a minimum of 13 years in patients who have undergone osteosynthesis with proximal humerus locking plates.

Methods

Patients with proximal humeral fractures, consecutively operated on from 2006 to 2011, were invited for a final follow-up. This included a physical examination with muscle strength testing and radiological evaluation. Stiffness, screw penetration, infection, and the need for implant removal were documented. Osteoarthritis was assessed using the Samilson-Prieto classification, and functional outcomes were evaluated using the Constant-Murley Score.

Results

21 shoulders of 20 patients including 13 female and 7 male are enrolled in the study. Mean age was 63 (32 - 85) and mean follow-up was 16 (13 – 18) years. There were 13 patients with varus posteromedial impaction, 3 with valgus impacted and 5 with surgical neck fractures. Mean postoperative neck-shaft angle was 137.3 ± 7 degrees. Mean elevation was 149.7 ± 29.2 degrees and mean external rotation was 52.6 ± 20.2 degrees. The average Constant-Murley score was 82 (54 – 96) and the average Samilson-Prieto Score was 0.9. Maximal range of external rotation ($p = 0.002$) and external rotation strength ($p < 0.001$) were significantly lower compared to contralateral unaffected side. Two patients underwent hardware removal due to screw penetration caused by avascular necrosis of the humeral head.

Conclusion

Locking plate fixation of proximal humeral fractures demonstrates favorable long-term outcomes despite significant limitation in the range and strength of the external rotation and mild osteoarthritis.

FP – 58

COMPARE THE RESULTS OF LOCKING PLATE OSTEOSYNTHESIS AND CONSERVATIVE TREATMENT OF DISPLACED PROXIMAL HUMERUS FRACTURES

Uğur Bezirgan, Malik Kismet, Mehmet Armangil

Ankara University Faculty of Medicine Ibn-i Sina Hospital

Aim

It was aimed to compare the results of conservative treatment and locking plate osteosynthesis in displaced proximal humerus fractures.

Background

There has been an increasing trend in surgical intervention in the last 20 years. Unfortunately, the initial promises of the locking plate system could not be fulfilled in old, weak, osteoporotic bones and varus collapse, Screw perforations and nonunion of the greater tuberosity have become increasingly common.

Methods

The study included patients over the age of 60 who were admitted to the university hospital, which is a tertiary trauma center, between 2020-2023 years with a diagnosis of 2, 3 and 4 piece proximal humerus fracture. 45 patients who underwent conservative follow-up and locking plate fixation were included. In the older age group, Neer 2-4 were followed conservatively with velpo.Displaced neck fractures and displaced (according to Neer classification) 3 and 4-piece fractures Locking plate fixation was performed. Constant Shoulder score, DASH and ASES score were applied in the follow-up of the patients for at least 1 year. Radiographs showed varus collapse , medial cortex displacement , greater tubercle displacement, absence of fracture lines and callus formation. For complications, findings of nonunion, malunion and avascular necrosis were recorded.

Results

Of the 45 patients in the study, 22 were followed up as a locked plate (group A) and 23 wer followed up conservatively (group B). 20 patients were grouped as Neer Type 2, 23 patients as Neer Type 3, and 2 patients as Neer Type 4. The average age of the patients was calculated as 63.38. DASH, ASES, Constant scores were similar between the 2 groups. No significant difference was detected in the radiological parameters between the 2 groups. In terms of complications, a significant difference was detected in the locking plate compared to the conservative one. Nonunion was observed in the humeral neck in 2 patients who underwent surgery. locked plate Secondary surgery was performed in one patient due to postoperative infection and in another patient due to joint perforation of the screw. While there was no correlation between humeral neck malunions and scores, a negative correlation was observed between tubercle malunions and scores.

Conclusion

Between locking plate and conservative treatment in proximal humerus fractures of the elderly. While no significant difference was observed in terms of scores, an increase in complications and secondary surgery was detected in locking plate. It has been observed that treatment with is not superior to conservative treatment.

References

1. Lübbeke A, Stern R, Grab B, Herrmann F, Michel JP, Hoffmeyer P. Upper extremity fractures in the elderly: consequences on utilization of rehabilitation care. Aging Clin Exp Res 2005; 17(4): 276-280.

2. Bell JE, Leung BC, Spratt KF, Koval KJ, Weinstein JD, Goodman DC, Tosteson AN. Trends and variation in incidence, surgical treatment, and repeat surgery of proximal humeral fractures in the elderly. J Bone Joint Surg Am 2011; 93(2): 121-131.

3. Saunders R, Astifidis R, Burke SL, Higgins J, Mcclinton MA. Hand and Upper Extremity Rehabilitation: A Practical Guide, 4th Edition, Paperback ISBN: 9781455756476.

FP – 59

DELIRIUM IN ELDERLY SUBJECTS HOSPITALIZED FOR HIP FRACTURE; CORRELATION TO SURGICAL AND DIFFERENT ANESTHETIC TECHNIQUES

Elena Bianchi[1], Sara Rogani[1], Giulia Pescatore[1], Antonio Polini[1], Cristina Cargiolli[1], Maria Napoleone[1], Leonarda Maltese[1], Antonio Polini[1], Valeria Calsolaro[1], Michelangelo Scaglione[2], Fabio Monzani[1], Agostino Virdis[1]

1 Pisa University Hospital, Geriatrics Unit
2 Pisa University Hospital, Department of Orthopedics and Traumatology

Aim

Considering the high frequency of delirium among hospitalized older patient for acute events, especially in orthopedic surgical setting, our study aims at evaluating the different impact of delirium in different surgical and anesthetic approach in elderly patients hospitalized for hip fracture. Moreover, we analyzed the correlation between waiting for surgery and the onset of delirium.

Methods

This is a retrospective observational case-control study. Patients admitted to Traumatology ward between September 2020 and June 2023 for hip fracture and aged over 65 years were included in the Orthogeriatric care. A trained geriatrician conducted Comprehensive Geriatric Assessment, full medical and pharmacological history, daily monitoring of blood tests and vitals and managing of possible complications, with particular attention to delirium onset, treatment and its relationship to potential triggers surgery-related.

Results

Out of 147 patients (110 females and 37 males), 80 patients developed delirium while 67 were part of the control group. Ninety-two patients (62.6%) were treated with intramedullary nails, while fifty-five with prosthesis placement: 41 with hip endoprosthesis (26.8%) and 13 thirteen with total hip prosthesis (8.8%). We found a lower prevalence of delirium in patients treated with THA, although not significant (p=0.41). Twenty patients were treated with general anesthesia, 24 with general anesthesia and analgesic nerve block, 9 with regional anesthesia and 41 with regional anesthesia associated with analgesic nerve block. Regional anesthesia with analgesic nerve block was related to the lowest incidence of delirium, although without reaching statistical significance. In the cohort, the latency between fracture and surgery was 2.36 days (minimum 0, maximum 12, median 2) and the mean length of stay was 8.6 days (SD=6.6); a longer wait for surgery correlates with a greater incidence of delirium (p=0.009).

Conclusion

The reduced delirium incidence in THA might be attributable to a faster mobilization of patients. Moreover, a more intensive pain control through anesthesia rather than painkillers use might determine lower incidence of delirium. The lack of statistical significance may be due to the small number of subgroup of patients treated with the analyzed technique burdened by a lower incidence of delirium. We could state that in elderly patients hospitalized for hip fracture, stabilization surgery should be performed as soon as possible, compatibly with the stabilization of other comorbidities, aiming at preventing delirium onset. While waiting for further studies with larger samples, it is desirable to prefer a prosthetic replacement operation to favor faster mobilization and an anesthetic technique burdened by less post-operative pain.

FP – 60

PREDICTORS, SURVIVORSHIP AND CHALLENGES IN MANAGEMENT OF FRACTURE OF NECK OF FEMUR IN NONAGENARIAN POPULATION

Peter Peev, Prasanth Nagaraj, Ibrahim Bahri, Saarthak Saxena, Cleo Rowntree

LNWUH NHS Trust

Aim

We aim to study the morbidity, mortality, and outcomes amongst nonagenarian patients at our institution who presented to our institution from 04/2022 until 12/2023 and planned to be treated with surgical fixation of a fractured Femur and assess The impact of morbidities on 30-day mortality rates in this cohort. The impact of morbidities on the duration of stay in hospital. The compliance and standards of care provided against national guidelines.

Methods

In our study we retrospectively observed 69 patients who presented from 04/2022 until 12/2023 and were planned to be treated with surgical fixation of a fractured Neck of Femur or Femur. 51 were males and 18 were females.

Inclusion Criteria: Fracture neck of femur amongst patients admitted at our hospital in patients aged 90 and above.

Exclusion Criteria: Bilateral fracture NOF, pathological fracture NOF, fracture NOF associated with ipsilateral femur fractures, fracture NOF associated with head injuries.

The outcomes measured were 30 days postoperative mortality rate and length of ward stay postoperatively. We used the following predictors: ASA, AMTS score, type of fracture, type of anaesthesia. Performance indicators of the care provided were also compared with national guidelines and statistics.

Results

30 days mortality was observed only in 8 patients out of 69.

We have modelled a multiple logistical regression function that assesses the effect of pre-op AMTS, ASA grade, Fracture type, and Anaesthesia type given on the 30-day mortality. A logistic model was favoured over a linear model due to the categorical nature of the outcome variable. Interpretation of this function suggests that the pre-op AMTS may be a significant predictor of mortality, and that the higher the pre-op AMTS, the less likely a patient would pass away in the first 30 days post-op (with an odds ratio of 0.662 – in keeping with the negative correlation observed) We initially checked for the correlation between our outcome variable (length of stay) and our morbidity predictor variables (namely pre-op AMTS). As these are both ordinal, a Spearman's rank correlation coefficient was calculated. We then modelled a multiple linear regression function that assesses the effect of pre-op AMTS, Delirium Assessment Score, ASA grade, Fracture type, and Anaesthesia type given on the length of hospital stay. A linear model was favoured over a logistic model due to the continuous nature of the outcome variable. Interpretation of this function suggests that there is no significant effect of any of these predictors on the length of hospital stay.

Conclusion

Fracture neck of femur in nonagenarian population presents a separate challenge for treating physicians from orthogeriatrics, anaesthesia and orthopaedic surgery. These patients can be expected to have better survival rates after prompt medical optimisation and surgery. Further analysis is necessary to assess the functional outcomes of this subgroup, as well as the potential cost implications.

References

1. Bolton D,Bush C, Wallace M T, Nonagenarian hip fractures: Morbidity and mortality at a single institution. 2021 Mar; J Clin Orthop Trauma 14: 69–73.

2. Malhotra R, Huq SS, Chong M, Murphy D, Daruwalla ZJ, Outcomes in Nonagenarians with Hip Fractures Treated Conservatively and Surgically, 2021, Malaysian Orthopaedic Journal, Vol 15 No 3., 21-28.

3. Fansa A, MD, Scott Huff, BA, Ebraheim N, MD Prediction of Mortality in Nonagenarians Following the Surgical Repair of Hip Fractures. 2016 June 8(2) Clinics in Orthopaedic Surgery, 140-145.

4. Lloyd R, Baker G, MacDonald J, Thompson NW. Co-morbidities in Patients with a Hip Fracture. Ulster Med J. 2019 Sep;88(3):162-166.

5. Bovonratwet P, Yang B W, Wang Z, Ricci W M, lane J M. Operative Fixation of Hip Fractures in Nonagenarians: Is It Safe? 2020 November, The Journal of Arthroplasty, Volume 35, Issue 11, P 3180-3187.

FP – 61

BONE-A-FIDE BREAKTHROUGH: MACHINE LEARNING CRACKS THE CODE ON OSTEOPOROSIS TREATMENT PREDICTIONS

Nur Atikah Mohd Asri[1,2], Azrin Muslim[1,2], Suzanne Laffan[1], Gavin Egan[1], George Pope[1], John Cooke[1], Padraig Bambrick[1], Riona Mulcahy[1], Sarah Mello[1], Niamh O'Regan[1], Annette McElligott[2]

1 University Hospital Waterford
2 University of Limerick

Introduction

Traditionally, osteoporosis treatment decisions rely on consideration of clinical appropriateness while balancing the treatment's risks and benefits. Machine learning (ML) decision support systems has data discovery potential that may be relevant to treatment decisions, presenting a potential solution for the osteoporosis treatment dilemma. While the physician is constrained to follow standard guidelines in order to determine osteoporosis treatment, it remains a subject of intrigue to ascertain if other parameters might serve as critical determinants for pharmacological intervention beyond those listed in the Summaries of Product Characteristics and the established gold standard of care.

Aim

This study seeks to discover other attributes in the Irish Hip Fracture Database (IHFD) that may be used to predict osteoporosis treatment through the use of ML.

Method

Datasets from January to March 2023 were sourced from the IHFD with 141 patients (instances) and 132 attributes identified. Osteoporosis treatment decisions were obtained from discharge letters. Preliminary data cleaning was performed in Excel and Arrfviewer with zero-variance and near-zero predictor attributes excluded. This resulted in 85 instances and 32 attributes. The dataset was entered into the WEKA 3.8.6 environment for ML processing.

Result

To identify key osteoporosis treatment predictors, the Correlation Feature Selection and Ranker Search Method was employed. The highest correlation attributes are pre-fracture total score, pre-fracture indoor score, and age. Moderately positive correlations are discharge destination, pre-fracture outdoor and shopping score, ASA grade, length-of-stay, admission code, admission 4AT score, frailty scale, and fracture type. The implemented J48 Tree ML-trained model revealed Correctly Classified Instances and Incorrectly Classified Instances of 98.24% and 1.7%, respectively, indicating a high prediction accuracy rate.

Conclusion

This study demonstrates the potential of ML in enhancing osteoporosis treatment decision-making by leveraging datasets from the IHFD. Integrating ML algorithms with traditional approaches can provide a comprehensive, nuanced and personal approach to osteoporosis treatment and patient care. The resulting model showed notable predictive performance, indicating the viability of ML in decision-making. The study opens avenues for future research in applying big data and advanced analytics in healthcare, underscoring the evolving landscape of medical decision-making.

References

1. Bennett, M.J., Center, J.R. and Perry, L., 2023. Exploring barriers and opportunities to improve osteoporosis care across the acute-to-primary care interface: a qualitative study. Osteoporosis International, pp.1-14.

2. Kamel, H.K., Hussain, M.S., Tariq, S., Perry, H.M. and Morley, J.E., 2000. Failure to diagnose and treat osteoporosis in elderly patients hospitalized with hip fracture. The American journal of medicine, 109(4), pp.326-328.

3. NOoC, A., 2020. Irish Hip Fracture Database National Report 2020. Online: National Office of Clinical Audit, p.49.

4. Sindel D. Osteoporosis: Spotlight on current approaches to pharmacological treatment. Turk J Phys Med Rehabil. 2023 May 15;69(2):140-152.

5. Tu KN, Lie JD, Wan CKV, Cameron M, Austel AG, Nguyen JK, Van K, Hyun D. Osteoporosis: A Review of Treatment Options. P T. 2018 Feb;43(2):92-104. PMID: 29386866; PMCID: PMC5768298.

FP – 62

THE IMPACT OF TRANEXAMIC ACID ON COST AND BLOOD LOSS IN PARTIAL HIP PROSTHESIS SURGERIES FOLLOWING FEMORAL NECK FRACTURE

Mücahid Osman Yücel, Sönmez Sağlam, Zekeriya Okan Karaduman, Mehmet Arıcan

Düzce University Faculty of Medicine, Department of Orthopedics and Traumatology

Aims

Among the significant complications of partial hip prosthesis (PHP) surgeries are intraoperative and postoperative blood loss. Tranexamic acid (TXA), which controls bleeding through the inhibition of fibrinolysis, is widely used in many major surgeries. This study aims to investigate whether TXA reduces blood loss and the need for transfusions, which is one of the most significant cost factors, following PHP surgery.

Method

This retrospective, single-center study included 79 patients who underwent PHP between January and December 2023. Of the patients who underwent unilateral primary PHP, 47 were female, with an average age of 77.2 and were divided into two groups. The first group (40 patients) received 15 mg/kg of TXA in 250 cc of saline solution following incision closure. Patients who did not receive TXA formed the second group (39 patients). Regional anesthesia was administered to the patients, and blood pressure was maintained between 90-110 mmHg systolic and 60-70 mmHg diastolic during the operation. All patients were given enoxaparin sodium until discharge. Demographic characteristics, operation duration, and postoperative complications were recorded. A t-test was used to determine whether there were differences in hemogram, blood transfusions, and total treatment costs between the groups receiving and not receiving TXA. Patients with coagulation disorders, thromboembolism, and cerebrovascular history were excluded.

Results

The average preoperative hemoglobin level for patients receiving TXA was 11.56, postoperative 10.44, and at discharge 9.04, with an average of 1.21 blood transfusions. For patients not receiving TXA, the preoperative hemoglobin was 11.31, postoperative 9.73, and at discharge 9.24, with an average of 1.81 blood transfusions. The average cost for the non-TXA group (23,907.97) was 35% higher than the TXA group (17,726.45). Aside from one case of superficial skin infection, no other complications were observed. The p-value for postoperative hemogram (0.036) was less than the significance level (0.05), indicating a statistically significant difference between the groups in this variable. The p-values for preoperative hemogram, discharge hemogram, blood transfusions, and cost variables were greater than 0.05, indicating no statistically significant differences between the groups for these variables.

Conclusions

These findings indicate that the use of TXA is effective in increasing postoperative hemoglobin levels but does not significantly impact other measures. Despite the lack of statistical significance, the average cost for the non-TXA group was found to be 35% higher than the TXA group, which can be attributed to the costs associated with blood transfusions. TXA may contribute to lowering overall costs by reducing the need for blood transfusions.

FP – 63

PREVALENCE OF COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

En Lin Goh, Amulya Khatri, Alexander Costa, Andrew Ting, Kat Steiner, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

University of Oxford

Aim

Older adults with hip fractures are at high risk of experiencing complications after surgery but estimates of the rate of specific complications vary by study design and follow-up period. This systematic review aimed to determine the prevalence of complications in older adults after hip fracture surgery.

Methods

MEDLINE, Embase, CINAHL and CENTRAL were searched until 30th June 2023. Studies were included if they reported prevalence data of complications in an unselected, consecutive population of older adults ≥60 years undergoing hip fracture surgery. The primary outcomes of interest were surgery-specific and general complications, which had been pre-specified a priori.

Results

A total of 95 studies representing 2,521,300 patients were included. For surgery-specific complications: the 30-day prevalence of re-operation was 2.3%, surgical site infection 1.7%, and deep surgical site infection 1.0%; the 365-day prevalence of prosthesis dislocation was 1.1%, fixation failure 1.8%, and peri-prosthetic/implant fracture 2.2%. For general complications: the 30-day prevalence of acute kidney injury was 1.2%, blood transfusion 25.6%, cerebrovascular accident 0.8%, lower respiratory tract infection 4.1%, myocardial infarction 2.0%, urinary tract infection 7.0%, and venous thromboembolism 2.2%.

Conclusions

The prevalence of complications was high. Re-operation rates within the first year were over two times higher than estimates from hip fracture registries and are likely to be more representative of the true real world risk. Furthermore, the prevalence of complications continued to increase throughout the first year after surgery. This is important to appreciate as many of the observational studies of larger hip fracture populations have focused on complications occurring during the index hospital admission. Overall, studies reporting complications after hip fracture surgery were generally of low quality. We advocate for routine monitoring of complications in registries and clinical trials, which will improve the quality of evidence. Our findings provide a reference range against which service performance can be benchmarked and can inform power calculations for future studies of interventions in hip fracture.

References

1. Goh EL et al. Complications following hip fracture: Results from the World Hip Trauma Evaluation cohort study. Injury. 2020.

2. Roche JJ et al. Effect of comorbidities and postoperative complications on mortality after hip fracture in elderly people: prospective observational cohort study. BMJ. 2005.

3. Prieto-Alhambra D et al. In-hospital care, complications, and 4-month mortality following a hip or proximal femur fracture: the Spanish registry of osteoporotic femur fractures prospective cohort study. Arch Osteoporos. 2018.

FP – 64

RISK FACTORS ASSOCIATED WITH THE DEVELOPMENT OF GENERAL COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE

En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

University of Oxford

Aim

Older adults with hip fractures are at high risk of developing complications. While risk factors associated with mortality after hip fracture have been extensively investigated, there is limited information on risk factors associated with the development of complications. This study aims to identify modifiable and non-modifiable risk factors associated with the development of general complications.

Methods

The World Hip Trauma Evaluation (WHiTE) study is a multi-centre prospective cohort study that collected data from patients ≥60 years who received operative treatment for their hip fracture. Patient were followed up for 120 days after injury. The Cox-proportional hazards regression model was used to assess the association between pre-specified (a priori) co-variates and the development of general complications.

Results

Data from 24,524 patients was available for analysis. The mean age the cohort was 82.9 (SD: 8.4) years and 17,186 (70.1%) were female. For general complications, the risk factor(s) identified were: acute kidney injury – age (HR: 1.64), male sex (HR: 1.29) and delayed mobilisation (HR: 1.70); blood transfusion – age (HR: 1.26), ASA grade ≥3 (HR: 1.37) and cephalomedullary nail (HR: 1.28); myocardial infarction – delayed surgery (HR: 1.66) and delayed mobilisation (HR: 2.08); lower respiratory tract infection – ASA grade ≥3 (HR: 2.15), male sex (HR: 1.33) and delayed mobilisation (HR: 1.97); urinary tract infection – cognitive impairment (HR: 1.53) and delayed mobilisation (HR: 1.53); and pulmonary embolism – delayed mobilisation (HR: 1.70).

Conclusions

Patient factors such as male sex, increasing age and co-morbidity were associated with higher risks of general complications, which may explain the excess mortality in these patient groups. We identified modifiable treatment-related factors such as operation type, delayed surgery and mobilisation that increased the risk of general complications. Our findings provide further insight into the relationship between risk factors, complications and mortality after hip fracture. The identification of modifiable treatment-related factors will enable us to design interventions aimed at reducing these risks, therefore, improving outcome after hip fracture.

FP – 65

NO DIFFERENCE IN DELIRIUM OR COMPLICATIONS AFTER HIP FRACTURE WHEN COMPARING TWO MODELS OF ORTHOGERIATRIC CARE

Lene Bergendal Solberg[1], Birgitte Regine Nydal[2], Elise Berg Vesterhus[1], Silje Stuksrud[1], Nina Ommundsen[2]

1 Division of Orthopaedic Surgery, Oslo University Hospital, Oslo, Norway
2 Department of Geriatric Medicine, Oslo University Hospital, Oslo, Norway

Aims

There is no consensus of which orthogeriatric care model that is best when treating patients with hip fractures. At Oslo University Hospital hip fracture patients > 65 years are either followed by an interdisciplinary team (orthopaedic surgeon, geriatrician, dedicated hip fracture nurse and physiotherapist) with shared responsibility and decision making between the orthopaedic surgeon and the geriatrician (Integrated Care Model - ICM), or with daily consultations by a geriatrician in an orthopaedic trauma ward (Geriatric Consult Service - GCS). We have previously demonstrated that ICM is equally good or better than GCS on selected quality indicators such as nerve-block pre-operatively, time to surgery, mobilization 1. postoperative day, removal of urinary catheter and osteoporosis medication. The aim of this study was to evaluate if there was any difference between the groups regarding delirium and in-hospital complications during their hospital stay for hip fracture.

Methods

A local prospective hip fracture database was used to evaluate the two coexisting models of care. Between January 2019 and December 2021 516 patients > 65 years were included in the evaluation: 360 in the ICM-group and 156 in the GCS- group. To ensure that delirium was evaluated equally for all the patients, an experienced geriatrician, blinded for the treatment groups, examined all the patients records and delirium was scored as “yes” or “no” depending on the patient characteristics described in the records.

Results

Delirium and in-hospital complications were similar in the two groups, also after adjusting for age, gender, pre-fracture ASA-score, pre-fracture dependency, cognitive impairment and fracture type. Delirium was found in 51% of the patients in both groups (183/360 in the ICM-group and 79/156 in the GCS-group), OR 1.12, 95% CI 0.75-1.68. In-hospital complications were also equal between the groups and found in 24% (87/360 in the ICM-group and 37/156 in the GCS-group), OR 1.10, CI 0.70-1.73. The in-hospital complications were mainly medical (122/124 medical, 2/124 surgical).

Conclusions

We found high prevalence of delirium and in-hospital complications in both groups, and there was no difference between the groups. These results probably reflect the high level of frailty among the hip fracture patients, resulting in increased risk of complications. Further research is needed to investigate if there is any difference in long-term outcomes between the orthogeriatric care models, as readmissions to hospital within the first year and dependency post-fracture.

FP – 66

CHARACTERISTICS OF OLDER HIP FRACTURE PATIENTS – A CHANGING TREND

Anette Hylen Ranhoff, Marianne Lid Kvaale, Tim Nansen, Mette Martinsen, Mads Sundet

Diakonhjemmet Hospital, Oslo, Norway

Aim

Norway, and particularly Oslo, has a decreasing incidence of hip fractures, but it is still high. In 2010 we published data from our orthogeriatric unit which showed that hip fracture patients were a heterogenous group which could be divided in three; fit older people who had fallen outdoors, frail older people who had fallen indoors, and residents who had fallen in a nursing home. Now, 14 years later, we want to explore if these groups of patients are stable, or if there are some trends of change. The aim is to describe the characteristics of old hip fracture patients admitted to an orthogeriatric unit from 2006 to 2023.

Methods

This is an observational study based on a quality database for all patients >65 years admitted to an orthogeriatric unit and operated for a hip fracture. The unit covers 250,000 inhabitants in Oslo. Patient data are collected in the aim of quality control. The quality database includes demographic, medical, and functional data collected from routine assessment by the interdisciplinary team. Patients were grouped in 3-year periods.

Results

From 2006 to 2023, 7180 patients were included. Mean age decreased steadily from 85.0 years in 2006/08 to 83.2 years in 2021/23, but mainly in men (83.3 to 80.9 years). At the same time the proportion of men have increased (23-32%). The fracture type was stable in women, while in men trochanteric fractures decreased (40-31%) and neck of femur fractures increased (52-62%). The hip fracture patients with outdoor falls increased both among women (13-24%) and men (21-37%). Fewer men sustained their fractures in nursing homes (26-16%), while this proportion was stable in women. The mean American Society of Anaesthesiologists (ASA) score was stable both in women and men during this period of time. Mortality rates were also stable during the time period both for women and men with respective 30-days and 1-year mortality of 6% and 22% for women and 11% and 33% for men.

Conclusions

From 2006 to 2023 we observe a change in hip fracture patient characteristics. The age is decreasing, the proportion of men is increasing, and men have less trochanteric fractures. Both genders increasingly fall outdoors. The underlying causes of these changes should be further explored.

FP – 67

RISK FACTORS ASSOCIATED WITH THE DEVELOPMENT OF SURGERY-SPECIFIC COMPLICATIONS IN OLDER ADULTS AFTER HIP FRACTURE

En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

University of Oxford

Aim

Older adults with hip fractures are at high risk of developing complications. While risk factors associated with mortality after hip fracture have been extensively investigated, there is limited information on risk factors associated with the development of complications. This study aims to identify modifiable and non-modifiable risk factors associated with the development of surgery-specific complications.

Methods

The World Hip Trauma Evaluation (WHiTE) study is a multi-centre prospective cohort study that collected data from patients ≥60 years who received operative treatment for their hip fracture. Patients were followed up for 120 days after injury. The Cox-proportional hazards regression model was used to assess the association between pre-specified (a priori) co-variates and the development of surgery-specific complications.

Results

Data from 24,524 patients was available for analysis. The mean age the cohort was 82.9 (SD: 8.4) years and 17,186 (70.1%) were female. For surgery-specific complications, the risk factor(s) identified were: prosthesis dislocation – total hip arthroplasty (HR: 2.56) and ASA grade ≥3 (HR: 2.17); peri-implant fracture – cephalomedullary nail (HR: 4.06) and cognitive impairment (HR:1.96); re-operation for any indication – cannulated screws (HR: 2.16), cephalomedullary nail (HR:1.94) and male sex (HR:1.24); revision surgery – cephalomedullary nail (HR: 2.63); re-operation for infection – male sex (HR:1.45) and ASA grade ≥3 (HR: 1.57); and surgical site infection – ASA grade ≥3 (HR:1.31).

Conclusions

Patient factors such as male sex and co-morbidity were associated with higher risks of surgery-specific complications, which may explain the poorer outcomes in these patient groups. Furthermore, we observed that operation type influenced the risk of surgery-specific complications, which is a potentially modifiable treatment-related factor. Our findings provide further insight into the relationship between risk factors and surgery-specific complications after hip fracture. Understanding the interaction between operation type and surgery-specific complications will guide clinical decision-making and equipoise, therefore, improving outcome after hip fracture.

FP – 68

THE ROLE OF MACHINE LEARNING FOR SURVIVAL ANALYSIS IN PATIENT SUSTAINING NECK OF FEMUR FRACTURES

Faizal Rayan[1], Abdul-Rahman Gomaa[3], Aatif Aatif[2], Andrei Morozov[2]

1 Kettering General Hospital
2 University Hospitals of Leicester
3 University of Liverpool

Introduction

Neck of femur (NOF) fractures are associated with high mortality rates. Around 10% of people with a hip fracture die within 1 month, and one third within 12 months. There is a high prevalence of concurrent comorbidity within these patients, which presents major challenges for their peri-operative care. As artificial intelligence (AI) and machine learning (ML) algorithms become mainstream within clinical practice, they can play a crucial role in predicting and optimising patient outcomes.

Methodology

All patients who sustained a NOF fracture over the past eleven years within our hospital were identified from the National Hip Fracture Database (NHFD). Their data was coupled with additional clinical data for each patient to create a combined single dataset. The data was analysed using the Pandas and Lifelines libraries within Python. Multiple survival analysis methods were trialled to fit the data and compare survival of patients based on different covariates. The final models selected for this study were: Kaplan-Meier, Nelson-Aalen and Cox Proportional Hazard. Using these models, a ML algorithm was used to identify the most significant covariates and create and train a mortality predictive algorithm at specific time intervals using the Cox model.

Results

A total of 2687 patient were identified for this study with follow up of one year minimum. Using the aforementioned models, the most important covariates in determining mortality rate were: male gender, type of operation, type of anaesthesia, pre-injury mobility status and the presence of certain comorbidities such as: Parkinson's disease and diabetes. The mortality predictive algorithm has a concordance index (c-index) of 0.7 at one month and one year; suggesting that it's a good model.

Discussion and Conclusion

Both AI and ML are playing a rapidly increasing role within clinical practice. As we demonstrated, they can be used to identify key optimisable covariates that influence clinical outcomes. They can also be used to inform wider health wider health policies during the pre-injury timeframe. Mortality rates can be accurately predicted for NOF fracture patients using ML algorithms. This work paves the way for further data-driven, targeted interventions which can improve mortality rates as well as patient outcomes.

FP – 69

PRESSURE ULCERS IN HIP FRACTURE PATIENTS UNDERGOING SURGERY AT LANDSPíTALI FROM 2013 TO 2018

Sigrun Sunna Skuladottir[1,2], Kolbrun Kristinasen[2], Ingibjorg Hjaltadottir[1]

1 Univeristy of Iceland
2 University Hospital Landspitali Iceland

Introduction

Pressure ulcers can be defined as injuries to the skin and underlying tissue resulting from prolonged pressure, typically occurring in patients with limited mobility and/or impaired sensation. Patients with hip fractures are at increased risk of developing pressure ulcers due to immobility and pain. A recent systematic international review spanning 20 years shows that the incidence of pressure ulcers is highest in orthopaedic surgery wards (18.5%) compared to other hospital wards. Studies on patients with hip fractures indicate that up to one-third develop pressure ulcers.

Objective

The objective was to investigate the prevalence of pressure ulcers and the characteristics of hip fracture patients admitted to Landspítali who developed pressure ulcers during their treatment period and to compare the findings with international studies.

Method

A retrospective data study was conducted on patients aged 67 and older diagnosed with hip fractures according to ICD-11 codes (S72.0, S72.1, and S72.2) from 2013 to 2018. Descriptive statistics and regression analysis were calculated. Nursing records from three surgical wards were reviewed for pressure ulcer risk assessments or diagnoses of pressure ulcers.

Results

Between 2013 and 2018, 1707 patients with hip fractures were admitted to Landspítali. The average age was 83 years, with a standard deviation of 7.9 years. Males comprised 32% of the patients. During this period, 64 pressure ulcer diagnoses were recorded among hip fracture patients (3.7%) in the three surgical wards. Of these, 2.9% had a risk assessment for pressure ulcers, and 0.8% had a pressure ulcer diagnosis. No diagnoses were recorded in 2013.

Conclusions

It is unlikely that only 0.8% of hip fracture patients at Landspítali developed pressure ulcers and that only 2.9% were at risk of developing them. The results indicate that nursing documentation on pressure ulcers in this patient group is significantly lacking, preventing definitive conclusions from being drawn based on the data.

FP – 70

WOULD YOU PREFER OSTEOSYNTHESIS OR ARTHROPLASTY?

Yiğit Önaloğlu, Volkan Karaduman

Istanbul Başakşehir Çam and Sakura City Hospital

Objectives

The study presents surgical complication results on osteosynthesis and arthroplasty treatments for femoral neck fractures (CFF) in people of similar ages.

Methods

Between 2021 and 2024, 75 patients with CFF operated on were analyzed. Three patients experienced a fall from a height, three from a traffic accident, and the others experienced a low-energy fall. Patients were divided into primary osteosynthesis and artroplasty groups. Age, gender, time to operation, postoperative hospitalization, and surgical complications were evaluated. 43 patients underwent osteosynthesis, while 32 underwent artroplasty. Pathologic fractures, and patients under 40 and over 65 years of age were excluded.

Results

The study involved 27 M and 48 F, and the mean age of patients who underwent osteosynthesis vs. artroplasty was 53.42 vs. 59.40. The osteosynthesis group operated on patients on admission day, while the artroplasty group was 9.34 days from admission. The average follow-up period for osteosynthesis vs. artroplasty patients was 24 vs. 13.5 months. All patients in the osteosynthesis group are alive, while 10 of the 32 patients in the artroplasty group died. Postoperative hospitalization was 3.02 days in the osteosynthesis group and 15.94 days in the arthroplasty group, with a mean ICU stay of 0.09 vs. 1.12 days. The study found three complications in the artroplasty group: a surgical site infection and a periprosthetic fracture developed in 2 patients, and a patient underwent revision due to early acetabular protrusion. In the osteosynthesis group, 13 complications were detected in 12 patients, including screw failure or breakage (10), isolated nonunion (2), and avascular necrosis (AVN) (1). Nine patients were revised with artroplasty and two patients with re-osteosynthesis.

Conclusion

The patients undergoing osteosynthesis had lower mortality rates, postoperative hospitalizations, and ICU stays, while those undergoing artroplasty had more complications. Revision of osteosynthesis and artroplasty also increased the risk of AVN.

FP – 71

MULTIDISCIPLINARY APPROACH TO OLDER PATIENTS WITH OSTEOPOROSIS AND CHRONIC KIDNEY DISEASE: CHALLENGING CASES

Ezgi Pinar[1], Zeynep Fetullahoglu[1], Sirin Zelal Sahin Tirnova[1], Serdar Ozkok[1], Nurdan Gul[2], Ozlem Soyluk Selcukbiricik[2], Gulsah Yenidunya Yalin[2], Savas Ozturk[3], Mehmet Akif Karan[1], Gulistan Bahat[1]

1 Istanbul University, Istanbul School of Medicine, Department of Internal Medicine, Division of Geriatrics
2 Istanbul University, Istanbul School of Medicine, Department of Internal Medicine, Division of Endocrinology and Metabolism
3 Istanbul University, Istanbul School of Medicine, Department of Internal Medicine, Division of Nephrology

Introduction

The risk of developing osteoporosis(OP) increases with age and may result in fragility fractures. The treatment of OP is clearly defined by guidelines.However, patient-based decision-making is necessary in challenging and controversial cases, especially for OP with chronic kidney disease(CKD). For this reason, a committee consisting of geriatricians, endocrinologists, and nephrologists was established in our center. Hereby, we aim to summarize the patients discussed in these meetings.

Material and Method

The committee first gathered in December 2023 and meets every 1 to 2 months to discuss the patients.

Results

Of the 19 patients discussed from the beginning, 8 had OP with CKD. Three patients (37.5%) were male. Mean age was 78.1 years (67-86). Two patients (25%) were on a hemodialysis plan 3 times a week; 1 had Grade 3a, 3 had Grade 3b, and 2 had Grade 4 CKD. Five patients (62.5%) had previous fragility fractures; however, only two of them received OP treatment after the fracture.For majority, the etiology of CKD is unknown.

For descriptive properties,we checked all patients' serum levels of Ca (corrected for albumin), P, CKD-EPI, PTH, ALP, 25-OH vitamin D, medications regarding bone metabolism, supplementation of either conventional or active Vit-D, T-scores of L1-4, femur neck and total, and in some cases where femoral DXA scan was impossible, distal forearm was established.

Three patients (37.5%) were considered to have OP with adynamic bone disease(ABD) and 5 patients had only OP.

Patients with ABD+OP were advised to stop taking calcium and Vitamin D supplements, and for phosphorus reduction, they were recommended to start on sevelamer if needed. Two of the OP-ABD patients were also started on teriparatide; the remaining patient was no longer ABD during follow-up, and her FRAX score for hip and major was 2.1 and 9.1, respectively, with no history of fractures. It was decided to follow her with a yearly DXA scan.

For three patients (60%) with OP+CKD (no ABD), denosumab was the shared decision for treatment.However, one of the remaining patients had bilateral femoral neck fractures, and her DXA scan showed a T-score of -5.0 on the distal forearm. This patient had no contraindications, and teriparatide was considered the best treatment for her. The other patient had already used alendronate for 10 years, and for the last three years, she was on a drug holiday. During that time, she sustained a fragility fracture,and her DXA scan showed a T-score of L1-4:-4.3 and femur total:-3.6. After consultation with cardiology, she was started on romosozumab.

Conclusion

Older patients tend to have more OP and fragility fractures, and the presence of CKD (bone mineral metabolism changes) and treatment modalities (like calcium, Vitamin D supplements, and P-reduction treatments) complicate the management of OP. These challenging cases should be discussed with a multidisciplinary approach, and a patient-based and patient-specific treatment decision should be made by experienced clinicians.

FP – 72

EXERCISE TRAINING IN PEOPLE WITH OSTEOPOROTIC FRACTURE AND FEAR OF FALLING

Sahar Johari[1], Joy Christine MacDermid[1], Laura Graham[1], Christina Ziebart[1], Erfan Sahfiee[1]

1 University of Western Ontario
2 Queen's University

Background and Purpose

Fear of falling (FoF) poses a significant problem for community-dwelling older adults with osteoporosis, resulting in reduced mobility and quality of life. While there is evidence supporting the benefits of exercise training, its specific impact on FoF in this population has not been thoroughly explored. This study aims to evaluate the evidence on the effects of various exercise regimens, including balance, resistance, and aerobic exercises, on FoF in community-dwelling older adults with osteoporosis.

Methods

We conducted an extensive search across multiple scientific databases. We included randomized controlled trials published in English that focused on exercise training for older adults with osteoporosis. Two independent reviewers screened and analyzed the articles, extracting key information such as author details, publication year, sample characteristics, intervention and control group specifics, FoF outcomes, duration and intensity of interventions, and follow-up periods. The risk of bias was assessed using the Cochrane Risk of Bias tool (RoB2), and the GRADE approach was used to evaluate the quality of evidence for each outcome. We calculated standardized mean differences and 95% confidence intervals for the quantitative synthesis of FoF.

Results and Discussion

Our review included eight randomized controlled trials addressing FoF, encompassing 2797 participants. All but one study (with some risk) were found to have a high risk of bias, primarily due to outcome measurement and selective reporting. Meta-analyses revealed that exercise training significantly reduced FoF, as measured by the Fall Efficacy Scale International (Overall effect size: –2.15, 95% CI= -3.16 to -1.15, Z= -4.2, p=0.001, and I^2=0.97). Despite the potential of exercise training to reduce fear of falling in individuals with osteoporosis, the substantial variability, high risk of bias, and methodological flaws in most studies highlight the need for high-quality research to develop evidence-based guidelines, refine intervention protocols, and assess the long-term impact and sustainability of these programs.

Conclusion

Our findings demonstrate that exercise training can significantly alleviate fear of falling in older adults with osteoporosis. This supports the integration of personalized exercise programs into fall prevention strategies for this population. Future research should focus on standardizing these interventions to maximize their effectiveness.

FP – 74

PILATES VS. AEROBIC TRAINING: EFFECTS ON PHYSICAL PERFORMANCE AND BLOOD VALUES IN ELDERLY WITH MILD COGNITIVE IMPAIRMENT

Emir İbrahim Işık[1], Selda Başar[2], Gülçin Dağlıoğlu[3]

1 Cukurova University Abdi Sutcu Vocational School of Health Services
2 Gazi University Faculty of Health Sciences
3 Cukurova University Faculty of Medicine

Aims

The aim of this study is to compare the effects of clinical Pilates and aerobic exercise training on physical performance, serum BDNF, IGF-1 and creatinine in elderly people with mild cognitive impairment (MCI).

Methods

Forty-seven elderly people aged 65-74 with a Standardized Mini Mental Test score between 18-23 were included in the study. 16 of them were in the clinical Pilates group, 15 in the aerobic training group and 16 in the control group. For 12 weeks, clinical Pilates training was given to the first group and moderate aerobic training was given to the second group. The control group did not receive any exercise during the same period. Balance (Berg Balance Scale), physical performance (Short Physical Performance Test), functional exercise capacity (6 Minute Walk Test), abdominal muscle endurance (Sit-Up test), muscle strength (hand dynamometer) tests were applied to evaluate physical and functional performance. Serum BDNF, IGF-1 and creatinine values were analyzed.

Results

At the end of exercise training, it was observed that both clinical Pilates and aerobic training increased functional exercise capacity, cognitive status, BDNF and creatinine levels ($p<0.05$). It was determined that clinical Pilates training increased balance, abdominal muscle endurance and muscle strength scores, while aerobic training also increased IGF-1 levels ($p<0.05$). In terms of the development differences provided by exercise training, clinical Pilates training was superior to aerobic training in improving the endurance of abdominal muscles ($p<0.05$). Aerobic training was also superior to clinical Pilates training in improving functional exercise capacity ($p<0.05$).

Conclusion

Clinical Pilates training has a similar effect as aerobic training in increasing functional exercise capacity, cognitive status, BDNF and creatinine levels. In addition, since it improves balance, abdominal muscle endurance and muscle strength, it is thought to be an alternative to aerobic training in terms of these parameters in the elderly with MCI.

FP – 75

DOES FEAR OF FALLING CORRELATED WITH BALANCE, FUNCTIONAL INDEPENDENCE AND ACTIVITY OF DAILY LIVING IN OLDER PEOPLE?

Filiz Can[1], Emin Ulaş Erdem[2], Dimitri Chan[1], İpek İkiz[3]

1 Hacettepe University, Faculty of Physical Therapy & Rehabilitation
2 Bulent Ecevit University, Faculty of Health Sciences, Department of Physiotherapy& Rehabilitation
3 Uluslarası Kıbrıs University, Faculty of Health Sciences, Department of Physiotherapy& Rehabilitation

Aim

Fear of falling in older individuals could result in limitation of functions, motor constraints, and lack of independence leading to a decrease in their motor functions. It appears that motor constraints and lack of independence lead to fear of falling and reduce the self-confidence and self-efficacy of the elderly. Fall-related self-efficacy mediated the effects of fear of falling on functional outcomes. In addition, fear of fall is associated with balance abnormalities restricting everyday functioning. By this perspective, examining the fear of fall in older individuals may be a way of evaluating their functional status, functional independency and even balance status in daily life. The aim of this study was to determine whether fear of fall is related with balance, functional indepence and activity of daily life.

Methods

30 commnunity dwelling older individuals (12 male, 18 female) aged between 60-73 were included in this study. Fear of falling was measured with Modified Efficacy Scale (MFES). Tinetti Balance Test and Up and Go Test were used for evaluating balance. Functional independence and activity of daily living were measured using Functional Independence Measure (FIM) and Nottingham Extended Activities of Daily Living Index (EADLI).

Results

The mean MFES score was found 23, 31 points for older individuals. FIM score was 126.21 points, EADL score was 56.34 points. Mean total Tinetti score was 16.45 points and Up& Go Test was 7.09 seconds for men, while Tinetti score was 14.67 points and Up& Go Test was 9.89 seconds for females. After the statistical analysis, it was found that MFES score was not correlated with Tinetti Score (r=- 0.124, p=0.555) and Up&Go test score (r=-0.354, p=0.87). There was no relationship between MFES and FIM scores (r= -0.108, p=0.619), whereas there was a negative correlation between MFES and EADL scores (r= - 0.435, p=0.025).

Conclusion

Contrary to our expectations, fear of falling was not a significant indicator of balance and functional indepence. However fear falling is closely related with activity of daily life. Once fear of fall increases, ADL is decreases. This may be due to limiting their activities in daily life for fall prevention resulted with dependency in ADL. Fear of falling causes activity restrictions in the older individuals, therefore, appropriate measures should be taken by health-care providers to boost self-confidence and alleviate their fears of falling. Thus, it is also important to make strategic planning for preventing and self managing fear of falling in older people.

References

1. Paolo R. Brustio, Daniele Magistro, Massimiliano Zecca, MonicaE. Liubicich & Emanuela Rabaglietti (2018) Fear of falling and activities of daily living function: mediation effect of dual-task ability, Aging & Mental Health, 22:6, 856-861.

2. Miriam F. Reelick, et al. The influence of fear of falling on gait and balance in older people. Age and Ageing, 38 (4): 435–440, July 2009.

FP – 76

INFORMAL CAREGIVER BURDEN OF PATIENTS WITH HIP FRACTURE: THE FORGOTTEN LINK IN THE CARE PROCESS?

Cristina Ojeda-Thies[1], Paula Gil-Vicedo[2,1], Francisco Soria-Perdomo[1,2]

1 12 de Octubre University Hospital
2 Complutense University of Madrid

Aims

Hip fractures on older adults significantly affects their quality of life and dependence is a common sequel of these injuries. Informal caregivers often suffer stress associated with health problems. The aim of this study was to describe the sociodemographic profile of informal caregivers of hip fracture patients, to evaluate the burden perceived and associated risk factors.

Methods

An observational, descriptive and retrospective study of 47 hip fracture patients at the Hospital Universitario 12 de Octubre and their informal caregivers was carried out, between 1 and 4 months after discharge from acute care. Their burden was analyzed using the Zarit Scale and the possible related risk factors evaluated by a structured interview.

Results

Most informal caregivers were women (70.2 %), daughters of the patients. A total of 63.8% of the caregivers presented a high caregiver burden; this was significantly more likely in women, in those who cared for patients with cognitive impairment, in those who lived with the patient and in those who attended him/her punctually.

Conclusion

Caring for patients in the first months after hip fracture carries a considerable subjective burden, assumed mainly by informal caregivers, especially daughters of the patients. It is necessary to implement support and training strategies in order to avoid “caregiver role fatigue”.

References

1. Zarit S.H., Reever K.E., Bach-Peterson J. Relatives of the impaired elderly: Correlates of feelings of burden. Gerontologist. 1980;20:649–655.

2. Nahm, E.-S., Resnick, B., Orwig, D., Magaziner, J., Degrezia, M. (2010). Exploration of informal caregiving following hip fracture. Geriatric Nursing (New York, N.Y.), 31(4), 254-262.

3. Oliva-Moreno, J., Peña-Longobardo, L. M., García-Mochón, L., Lozano, M. del R., Metcalfe, I. M., García-Calvente, M. del M. (2019). The economic value of time of informal care and its determinants (The CUIDARSE Study). PLOS ONE, 14(5), e0217016.

4. Parry, J. A., Langford, J. R., Koval, K. J. (2019). Caregivers of hip fracture patients: The forgotten victims? Injury, 50(12), 2259-2262.

FP – 77

THE IMPLEMENTATION OF AN ACTIVITY AND MOBILITY PROGRAMME ON A FRACTURED NECK OF FEMUR WARD TO PREVENTION DECONDITIONING

Charlene Lawrence-Douglas, Rebecca Ferneyhough

University Hospital of North Midlands

Aims

Occupational therapists and physiotherapists play an integral role in the rehabilitation of patients who have undergone hip fracture surgery. Older adults who have sustained a fracture neck of femur are at a higher risk of hospital- associated deconditioning and increased risk of delirium. Functional decline can occur within two days of admission to hospital. Preventing deconditioning is a high priority within the acute trust. The service improvement project aimed to introduce an Activity and Mobility Programme on a fractured neck of femur ward to encourage and document patient activity and movement. Our trust joined the John Hopkins Activity and Mobility programme. This supported the multidisciplinary team to implement a structured quality improvement process to successfully increase patient activity and improve patient outcomes.

Methods

The Johns Hopkins Pilot is currently being run over twelve months with data collected before, during and after completion. The trusts information technology team developed a bespoke software using Johns Hopkins “6 clicks” tool to support with setting mobility and activity goals. The project team devised a dashboard that monitors compliance with completing the Johns Hopkins Highest level of mobility scale. The therapy team completed ward based training sessions to increase the confidence of the MDT to encourage and promote mobility and activity instead of waiting for the therapy team to complete. There were several focus groups to understand some of the barriers and how we could address these in order to support a change in practice. Following the John Hopkins programme has made activity and mobility a number one priority to all members of the multidisciplinary team, which historically was seen as a therapy priority.

Current Results

The compliance has gone from 2.34% to 72% compliance. As a therapy team we wanted to see if using the Johns Hopkins programme would have an impact on our length of stay. A length of stay audit was completed in 2022 where the average length of stay was 19 days. Data was collected six months into the project and our average length of stay was 17 days. Data collection is currently ongoing.

Conclusion

Using the John Hopkins programme demonstrated increased compliance of documenting activity and mobility goals by the nursing and therapy teams.The therapy team has been an integral part of the implementation of the Johns Hopkins project. They encouraged the multidisciplinary team to increase mobility and activity on the ward, focusing on functional activity to encourage and promote independence in activities of daily living. The project has positively impacted on the number of patients being seen in between therapy sessions and has enabled the therapy to prioritise their caseload more effectively. They have more capacity to see patients who require intensive therapy and have more scope to complete occupational therapy functional interventions and delirium prevention.

References

1. Sheehan KJ, Goubar A, Almilaji O, et al. Discharge after hip fracture surgery by mobilisation timing: secondary analysis of the UK national hip fracture database. Age Ageing 2021;50:415–22. doi:10.1093/ageing/afaa204.NHFD 2022 annual report. The National hip fracture database. 2023. Available: https://www.nhfd.co.uk/ [Accessed 20th February 2023].

2. NICE (National institute for clinical excellence) guideline The management of hip fracture in adults. 2023.www.nice.org.uk

3. Covert, S., Johnson, J. K., Stilphen, M., Passek, S., Thompson, N. R., & Katzan, I. (2020). Use of the Activity Measure for Post-Acute Care “6 Clicks” Basic Mobility Inpatient Short Form and National Institutes of Health Stroke Scale to predict hospital discharge disposition after stroke. Physical Therapy, 100(9), 1423–1433.

4. Jette, D., Stilphen, M., Ranganathan, V. K., Passek, S. D., Frost, F. S., & Jette, A. M. (2014). AM-PAC “6-Clicks” functional assessment scores predict acute care hospital discharge destination. Physical Therapy, 94(9), 1252–1261.

FP – 78

COMMON EXERCISE MODALITIES AND OUTCOME MEASURES FOR OLDER ADULTS WITH HIP FRACTURE AND COGNITIVE IMPAIRMENT IN DENMARK

Jan Arnholtz Overgaard[1,2], Morten Tange Kristensen[3,4], Lauren Alison Beaupre[5], Kristian Steen Frederiksen[6,7], Søren T Skou[2,8]

1 Department of Rehabilitation, Lolland Municipality, Denmark
2 Research and Implementation unit PROgrez, Næstved-Ringsted-Slagelse Hospitals, Region Zealand, Denmark
3 Department of Physical and Occupational Therapy, Copenhagen University Hospital, Bispebjerg-Frederiksberg, Denmark
4 Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark
5 Faculty of Rehabilitation Medicine - Physical Therapy, University of Alberta, Edmonton, Canada
6 Danish Dementia Center, Department of Neurology, Copenhagen University Hospital – Rigshospitalet, Denmark
7 Department of Clinical Medicine, Faculty of Heath and Medical Science, University of Copenhagen, Copenhagen, Denmark
8 Research Unit for Musculoskeletal Function and Physiotherapy (FOF), University of Southern Denmark (SDU), Odense, Denmark

Aim

To understand elements of exercise and outcome measures used in older adults with hip fracture and signs of cognitive impairment (HF-SCI) in the municipalities across Denmark.

Method

Cross-sectional E-survey inviting all 98 municipalities in Denmark. Information was gathered on nine different exercise modalities and 26 outcome measures used in older adults with HF-SCI post-hospital discharge within four settings: 24-h care (24H), home-based (HB), outpatient center (OPC), and nursing home (NH). Comparisons were performed using descriptive statistic and presented with numbers, and percentage.

Results

The survey received responses from 90 out of 98 municipalities (92%). Functional exercise predominated at 24H (97%) and HB (97%), and NH (96%) settings, while balance training was the most used at OPC (90%). Across all settings, the 30-sec chair stand test was the most frequently used outcome measure. Cognitive screening tests were sparingly employed, with the Montreal Cognitive Assessment predominating at 24H (28%), but less so at HB (16%), OPC (13%), and NH (11%). Pain scores were limited to the Numeric Pain Scale, with usage rates of 28% at HB and 26% at NH, OPC, and 24H.

Conclusion

This E-survey had a high response rate. The preferred exercise modality was functional exercise. Few municipalities used cognitive screening tests and pain scales whereas performance-based testing was more predominant.

FP – 79

ASSOCIATION OF DIFFERENT FRAILTY SCREENING TOOLS WITH DEPENDENCY AND DYSPHAGIA AMONG THE OLDER OUTPATIENTS

Fatma Özge Kayhan Koçak[1], Sibel Çavdar[2], Sumru Savaş[3], Fulden Saraç[3]

1 Geriatric Medicine, Internal Medicine, Tepecik Education and Research Hospital, İzmir, Türkiye
2 Division of Geriatrics, Internal Medicine department, Izmir Bayrakli Integrated Health Campus (City Hospital), İzmir, Türkiye
3 Division of Geriatrics, Internal Medicine Department, Faculty of Medicine, Ege University, Izmir, Türkiye

Aims

Frail older adults are at an increased risk of developing disabilities in Activities of Daily Living (ADLs). Early detection of frailty is therefore important for maintaining independence. Our aim is to evaluate the association of different frailty screening tools with dependency and dysphagia among older outpatients.

Methods

This cross-sectional study involves 243 consecutive patients aged 65 years or older from the university hospital geriatric medicine outpatient clinic from January 2019 to November 2021. Dysphagia was evaluated by Eating Assessment Tool-10 (EAT-10). Dependency were assessed by Katz ADLs and Lawton-Brody instrumental ADLs (IADLs). Frailty status was determined by the Clinical Frailty Scale (CFS), the Groningen Frailty Index (GFI) and the FRAIL scale (FS).

Results

Of all, 90 (37%) males and 153 (63%) females with a median age of 75 years were included. According to ADLs and IADLs, 22.2% and 43.2% were classified as impaired ADL and impaired IADL, respectively. The prevalence of dysphagia evaluated by Eating Assessment Tool-10 (EAT-10) was 25.5%. Frailty was identified in 182 (74.9%), 176 (72.4%) and 54 (57.5%) patients according to the CFS, the GFI and the FS, respectively. The AUC values of the CFS, GFI and FS were 1 (95% CI 1.00-1.00), 0.772 (95% CI 0.698-0.846) and 0.830 (95% CI 0.762-0.899) for predicting dependency in ADLs. The AUC values of the CFS, GFI and FS were 0,721 (95% CI 0,658-0,784), 0.600 (95% CI 0.529-0,671) and 0.698 (95% CI 0,630-0,765) for predicting dependency in IADLs. The AUC values of the CFS, GFI and FS were 0.630 (95% CI 0.547-0.712), 0.715 (95% CI 0.641-0.789) and 0.745 (95% CI 0.678-0.812) for predicting dysphagia.

Conclusions

GFI and FS are both self-reported instruments, whereas CFS is indeed a clinician-rated instrument used to assess frailty. Our findings are that frailty assessment based on observation and clinical judgement is more predictive of dependence in older outpatients, whereas self-reported assessment based on the frailty phenotype is more important for dysphagia.

FP – 80

UNDER THE RADAR: PHYSIOTHERAPISTS' TREATMENT OF PEOPLE WITH PARKINSON'S DISEASE IN HIP FRACTURE CARE

Kirsten Dous[1,2]

1 Physiotherapy Department, The Prince Charles Hospital, Brisbane, Australia
2 Griffith University, Gold Coast, Australia

Introduction

People with Parkinson's Disease (PD), have increased risk of falls and hip fractures (1) and face higher post-surgery complication rates (2) than their peers. Physiotherapy is crucial in their recovery (3), but specific guidelines for people with PD with hip fractures are lacking. This study aimed to investigate the physiotherapy management and interventions to improve their outcomes. Minimum pre-admission walking ability was 10m, with or without assistance.

Methods

A retrospective chart review compared patients with PD to those without, during acute stay at The Prince Charles Hospital between July 2020-June 2021 (n=321). Physiotherapy interventions (respiratory care, rehabilitation and mobility progression), staffing and understanding of PD were collected. Outcomes included mortality, respiratory infection and delirium rates, length of stay (LOS), walking ability, discharge (DC) destination and Cumulated Ambulation Score (CAS)(4). Chi-square tests for categorical variables, and T-test and Mann Whitney for continuous variables, compared differences.

Results

Twenty-three (7.2%) patients with PD (mean age 83.4(SD 6.8); 56.3% male) were compared with 298 without PD (mean age 82.3(SD 10.2); 67.8%) females. The majority of were from home and independently mobile. In the PD group, intracapsular fractures (52.2%) and hemiarthroplasty surgery (56.5%) were more common. Median LOS was 9.8 (p=0.707), while median occasions of service (OOS) were 6 (IQR 6) and 7 (IQR 4) for PD and non-PD respectively (p=0.551). PD patients had higher percentages of intervention type (respiratory (34.7% PD, 28.0% non-PD) rehabilitation (75.8% PD, 62.7% non-PD) and mobility (85.0% PD, 62.8% non-PD), but specialised care was limited. Only, 12 patient charts had PD documented, 39.1% saw a senior or specialised physiotherapist and PD cueing strategies used for 2 patients.

Fewer PD patients were offered Day 1 mobilisation (78.3% PD,92.9% non-PD, P=0.029), total inpatient ambulation was poor (median 3.5m(IQR 95.5) PD, 61.5m(IQR 166.0) non-PD, p=0.022), DC CAS was lower (p=0.024), and despite 39.1% developing aspiration pneumonia (p=<0.001), secretion clearance interventions were underutilised (10 OOS). PD patients had higher complication rates including delirium (78.3% PD, 49.3% non-PD p=0.007), respiratory infections (43.5% PD, 15.1% non-PD p=0.002) and mortality (8.7% PD, 4.0% non-PD). On DC, independent walking was reduced (p=0.024) and aged care admissions (21.7% PD, 10.4% non-PD) increased.

Conclusion

Despite poorer outcomes, PD did not appear to impact Physiotherapists' intervention choices, possibly due to a lack of recognition and understanding of the complexities of the condition(5). Junior staff and Orthopaedic location may have contributed. Intervention levels for PD patients did not meet recommended frequency or intensity levels for hip fractures (6), emphasizing specialised education and training is needed to manage people with PD for optimal recovery.

References

1. Pouwels S, Bazelier MT, De Boer A, Weber WE, Neef C, Cooper C, De Vries F. Risk of fracture in patients with Parkinson's disease. Osteoporosis International. 2013 Aug; 24:2283-90.

2. Critchley RJ, Khan SK, Yarnall AJ, Parker MJ, Deehan DJ. Occurrence, management and outcomes of hip fractures in patients with Parkinson's disease. British Medical Bulletin. 2015 Sep 1;115(1).

3. McDonough CM, Harris-Hayes M, Kristensen MT, Overgaard JA, Herring TB, Kenny AM, Mangione KK. Physical therapy management of older adults with hip fracture: clinical practice guidelines linked to the International Classification of Functioning, Disability and Health From the Academy of Orthopaedic Physical Therapy and the Academy of Geriatric Physical Therapy of the American Physical Therapy Association. Journal of Orthopaedic & Sports Physical Therapy. 2021 Feb;51(2):CPG1-81.

4. Kristensen MT, Andersen L, Bech-Jensen R, Moos M, Hovmand B, Ekdahl C, Kehlet H. High intertester reliability of the cumulated ambulation score for the evaluation of basic mobility in patients with hip fracture. Clinical Rehabilitation. 2009 Dec;23 (12) :1116-23.

5. Coomber R, Alshameeri Z, Masia AF, Mela F, Parker MJ. Hip fractures and Parkinson's disease: a case series. Injury. 2017 Dec 1;48(12):2730-2735.

6. Australian Commission on Safety and Quality in Health: Hip Fracture Clinical Care Standard 2023, https://www.safetyandquality.gov.au/sites/default/files/2023-09/hip-fracture-clinical-care-standard-2023.pdf

FP – 81

COMPLICATION PROFILE OF HIP FRACTURE PATIENTS TREATED WITH ARTHROPLASTY

En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

University of Oxford

Aim

Older adults with a hip fracture are at high risk of experiencing complications after surgery. There is a little information available on the complication profile of routinely used orthopaedic implants in clinical practice. This study aims to describe and compare the complication risks between hip hemiarthroplasty (HHA) and total hip arthroplasty (THA).

Methods

The World Hip Trauma Evaluation (WHiTE) study is a multi-centre, prospective cohort study that enrolled patients age ≥60 years who received operative treatment for their hip fracture. Patients were prospectively followed up for 120 days after surgery. We report the cumulative incidence of each complication and comparisons between the study groups.

Results

A total of 13,359 patients who had a HHA (n=11,283) or THA (n=2,076) were included in the analysis. For surgery-specific complications, THA had higher risks of prosthesis dislocation (HR: 1.91) and re-operation for any indication (HR: 1.11); and lower risks of peri-prosthetic fracture (HR: 0.41); surgical site infection (HR: 0.80) and re-operation for infection (HR: 0.76) compared to HHA. For general complications, THA had higher risk of venous thromboembolism (HR: 1.11); and lower risks of acute kidney injury (HR: 0.53); blood transfusion (HR: 0.69); cerebrovascular accident (HR: 0.21); lower respiratory tract infection (HR: 0.46); myocardial infarction (HR: 0.32); and urinary tract infection (HR: 0.44) compared to HHA.

Conclusions

THA was associated with higher risks of surgery-specific complications compared to HHA. These findings are consistent with recent observational and trial data, and supports a judicious approach towards the use of THA in hip fracture patients. The THA group had a lower risk of general complications, which can be attributed to the healthier baseline state of this population. The elevated risk of venous thromboembolism is a new and important observation, warranting further investigation to understand potential risk factors that may be implicated. Overall, THA confers a higher risk of surgery-specific complications compared to HHA, which should be weighed up against the patient-specific benefits that THA may offer.

References

1. Goh EL et al. Complications following hip fracture: Results from the World Hip Trauma Evaluation cohort study. Injury. 2020.

2. Hansson S et al. More hip complications after total hip arthroplasty than after hemi-arthroplasty as hip fracture treatment: analysis of 5,815 matched pairs in the Swedish Hip Arthroplasty Register. Acta Orthop. 2020.

FP – 82

THE IMPACT OF PREOPERATIVE DAY 1 ELECTROLYTE IMBALANCE ON HOSPITAL STAY AND AMBULATION TIME FOR HIP FRAGILITY FRACTURES

Cumhur Deniz Davulcu, Muhammed Yusuf Afacan

Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Orthopaedics and Traumatology, Istanbul, Türkiye

Aim

Electrolyte imbalances are prevalent in elderly population with fragility fractures. However, the specific effects of these imbalances on hospital stay and ambulation time remain unclear. This study aimed to investigate the impact of managing preoperative day 1 electrolyte imbalances on the length of hospital stay and time to ambulation among elderly patients with proximal femur fragility fractures (PFFF).

Materials and Methods

A retrospective analysis was conducted on elderly patients aged 65 years and above who underwent surgical intervention for PFFF over a seven-year period. Patients were categorized into two groups based on the presence or absence of preoperative electrolyte imbalances, identified from preoperative day 1 blood tests. Data included demographics, comorbidities, sodium and potassium levels, surgical details, and postoperative outcomes. Electrolyte imbalances were defined as hyponatremia (Na+<135mEq/L), hypernatremia (Na+>145mEq/L), hypokalemia (K+<3.5mEq/L), and hyperkalemia (K+>5.0mEq/L). Management protocols for correcting these imbalances were reviewed. Statistical analyses assessed the association between these electrolyte imbalances and the length of hospital stay and time to ambulation, adjusting for confounding variables such as age, comorbidities, and surgical factors.

Results

A total of 138 elderly patients were included in the analysis. Patients were divided into two groups: 50 patients (36%) with preoperative electrolyte imbalances and 88 patients without. Patients with electrolyte imbalances experienced a significantly longer hospital stay compared to those without imbalances (average 12 days vs. 7 days, $p<0.05$). Specifically, moderate to severe hyponatremia (Na+<130 mEq/L) and hypokalemia (K+<3.0 mEq/L) were strongly associated with prolonged hospital stays. Hypernatremia and hyperkalemia were also associated with longer hospital stays, albeit to a lesser extent. Time to postoperative ambulation was also delayed in patients with electrolyte imbalances (average 4 days vs. 2 days, $p<0.05$). Multivariate analysis, adjusted for age, comorbidities, and surgical variables, confirmed that preoperative electrolyte imbalance was an independent predictor of prolonged hospital stay (adjusted OR=2.3, 95% CI 1.7-3.2, $p<0.001$) and delayed ambulation (adjusted OR=2.1, 95% CI 1.5-3.0, $p<0.001$). Patients who received timely and appropriate management of these imbalances preoperatively had shorter hospital stays and faster times to ambulation.

Conclusion

Our findings underscore the critical importance of preoperative day 1 electrolyte assessment and management in elderly patients with PFFF. Addressing especially hyponatremia and hypokalemia, prior to surgical intervention may significantly reduce the length of hospital stay and time to ambulation. Future prospective studies are warranted to validate these findings and to establish optimal strategies for electrolyte optimization in this vulnerable population.

FP – 83

CLINICAL FRAILTY SCORES (CFS) IN NECK OF FEMUR FRACTURES (NOF): A VALID TOOL IN PREDICTING POST OPERATIVE OUTCOMES

Victoria Ahmed, Bassel Abouzeid, Apurba Chatterjee

Royal Berkshire Hospital NHS Foundation Trust

Background

Frailty affects older patients' ability to restore balance after a stressful physiological event. Rockwood Clinical Frailty Scale (CFS) is a quick and reliable tool to quantify frailty informing healthcare workers on prognosis of patients. Following the first, 2023, cycle of 90 NOF patients with CFS assigned retrospectively and correlated to different medical and social outcomes, CFS was introduced as part of the NOF clerking proforma.

Aim

Validate correlation and significance of CFS to medical and social outcomes in NOF patients.

Methods

89 patients were procured from National Hip Fracture Database between May to August 2023 for second cycle audit. CFS scores were assigned on admission by a frailty nurse or an Orthogeriatrician. Patients were stratified into three groups, CFS<5, CFS 5, CFS>5. Five major outcomes were measured: Length of Stay (LOS), Mobility, Post-Operative Residence, Respiratory Complications, and Mortality.

Results

54% (48/89) had CFS < 5, 18% (16/89) CFS 5 and 28% (25/89) CFS > 5. CFS was positively correlated to LOS (r=0.1998), respiratory complications (r=0.2313), becoming bedbound post-operatively (r=0.68313) and mortality (r=0.27159). CFS was negatively correlated to going home post-operatively (r=-0.85092).

Conclusion

CFS can be used to quantify and predict hospital stays, medical complications and social outcomes to manage patients and family expectations on admission.

References

1. Rockwood, K., Howlett, S.E. Fifteen years of progress in understanding frailty and health in aging. BMC Med 16, 220 (2018).

2. Krishnan, M. et al. Predicting outcome after hip fracture: using a frailty index to integrate comprehensive geriatric assessment results. Age Ageing 43, 122–126.

3. McAdams-DeMarco, M. A. et al. Frailty and early hospital readmission after kidney transplantation. Am J Transplant 13, 2091–2095.

4. Rosted, E., Schultz, M. & Sanders, S. Frailty and polypharmacy in elderly patients are associated with a high readmission risk. Dan Med J 63 (2016).

5. Makary, M. A. et al. Frailty as a predictor of surgical outcomes in older patients. J Am Coll Surg 210, 901–908.

FP – 84

HEMIARTHROPLASTY, TOTAL HIP ARTHROPLASTY, AND INTERNAL FIXATION FOR HIP FRACTURES IN PATIENTS OVER 80 YEARS OF AGE

Kadir Uzel[1], Murat Birinci[1], Ömer Serdar Hakyemez[2], Bilal Bostancı[1], İzzet Bingöl[3], Naim Ata[4], Mustafa Okan Ayvalı[4], Mahir Ülgü[4], Şuayip Birinci[5], Vasfi Karatosun[6], Bülent Atilla[7], İbrahim Azboy[1]

1 İstanbul Medipol University, Faculty of Medicine, Department of Orthopaedics and Traumatology, İstanbul, Türkiye
2 Şırnak State Hospital, Department of Orthopaedics and Traumatology, Şırnak, Türkiye
3 Health Sciences University, Faculty of Medicine, Ankara Oncology Training and Research Hospital, Department of Orthopaedics and Traumatology, Ankara, Türkiye
4 Ministry of Health, General Directorate of Health Information Systems, Ankara, Türkiye
5 Ministry of Health, Deputy Minister, Ankara, Türkiye
6 İzmir Dokuz Eylül University, Faculty of Medicine, Department of Orthopaedics and Traumatology, İzmir, Türkiye
7 Hacettepe University, Faculty of Medicine, Department of Orthopaedics and Traumatology, Ankara, Türkiye

Purpose

Hip fractures are a common cause of mortality in elderly patients. This study aimed to determine the predictive factors affecting mortality among patients over the age of 80 who underwent surgical treatment for hip fractures.

Methods

We searched the Turkish Ministry of Health's e-health database to identify patients over 80 years old who had undergone surgery for proximal femoral fractures from 2016 to 2022. This process yielded 53,495 patients. Demographic data as well as comorbidities, blood transfusions, postoperative 90 days medical complications, and mortality was investigated. Multivariate logistic regression analysis was performed to identify risk factors for one year mortality in patients undergoing surgical treatment for proximal hip fractures.

Results

The mortality rate was 37.2% in the first year. The mean Charlson comorbidity index (CCI) was 6.8 (range: 4-22). In the postoperative period, 68.6% of the patients received blood transfusions. Logistic regression analysis identified significant predictors of one-year mortality in surgical patients, including male gender, increased age, higher CCI scores, having complication in 90-days postoperatively such as AKI, PE, pneumonia, electrolyte imbalance, gastrointestinal bleeding, and blood transfusion. However, increased mortality risk is associated with hemiarthroplasty and internal fixation compared to total hip arthroplasty. ($p<0.001$ for all).

Conclusions

This large cohort study demonstrated that the mortality rate is high and that the type of surgery, male gender, older age, blood transfusion requirements, and high CCI score are associated with mortality in patients over 80 years of age who have undergone surgery for hip fractures. Preoperative optimization and postoperative care are critical for these vulnerable elderly patients.

FP – 85

COMPLICATION PROFILE OF HIP FRACTURE PATIENTS TREATED WITH INTERNAL FIXATION

En Lin Goh, May Ee Png, David Metcalfe, Jonathan Cook, Matthew Costa

University of Oxford

Aim

In recent years, there has been a trend towards the use of cephalomedullary nail (CMN) over sliding hip screw (SHS) for the treatment of trochanteric fractures, despite the lack of good quality evidence supporting either implant, and higher costs of CMN. This study aims to describe and compare the complication risks between SHS and CMN fixation.

Methods

The World Hip Trauma Evaluation (WHiTE) study is a multi-centre, prospective cohort study that enrolled patients age ≥60 years who received operative treatment for their hip fracture. Patients were prospectively followed up for 120 days after surgery. We report the cumulative incidence of each complication and comparisons between the study groups.

Results

A total of 8,187 patients who had a SHS (n = 5,544) or CMN (n = 2,643) were included in the analysis. For surgery-specific complications, CMN had higher risks of fixation failure (HR: 1.73); peri-implant fracture (HR: 3.47); re-operation for any indication (HR: 1.72); revision surgery (HR: 2.04); and deep surgical site infection (SSI) (HR: 1.47) compared to SHS. For general complications, CMN had higher risk of blood transfusion (HR: 1.27); and similar risks of acute kidney injury (HR: 1.03); cerebrovascular accident (HR: 0.77); lower respiratory tract infection (HR: 0.90); myocardial infarction (HR: 1.03); urinary tract infection (HR: 0.86); and venous thromboembolism (HR: 1.13) compared to SHS.

Conclusions

We observed higher risks of surgery-specific complications with CMN compared to SHS. Internal fixation with CMN caused one additional re-operation per 112 patients, one additional peri-implant fracture per 200 patients, and one additional deep SSI per 250 patients. It is important to consider that CMN are used for more complex trochanteric fractures in some hospitals in the United Kingdom, which may explain the higher rates of these complications. For patients with stable fracture configurations, the SHS is likely to offer better value-based care.

References

1. Goh EL et al. Complications following hip fracture: Results from the World Hip Trauma Evaluation cohort study. Injury, 2020.

3. Lewis SR et al. Cephalomedullary nails versus extramedullary implants for extracapsular hip fractures in older adults. Cochrane Database Syst Rev. 2022.

3. INSITE Investigators. Intramedullary Nailing vs Sliding Hip Screw in Trochanteric Fracture Management: The INSITE Randomized Clinical Trial. JAMA Netw Open, 2023.

FP – 86

IMPACT OF MALNUTRITION IN PATIENTS WITH HIP FRACTURE IN THE SPANISH NATIONAL HIP FRACTURE REGISTRY (RNFC)

Patricia Ysabel Condorhuamán-Alvarado[1,2], Teresa Pareja Sierra[3], Angélica Muñoz Pascual[4], Cristina Ojeda Thies[5], Cristina González de Villaumbrosia[6], Paloma Gómez Campelo[2], Gabriela Ivonne Morales Mena[1], Gloria Elizabeth Toapanta Yanza[1], Arquímedes Oramas González[1], Melissa Marelia Villarroel Espinoza[1], Iris Riera Carlos[1], Juan Ignacio González Montalvo[1,2], Pilar Sáez López[7]

1 Department of Geriatric Medicine, Hospital Universitario La Paz, Madrid, Spain
2 Instituto de Investigación Biomédica del Hospital Universitario La Paz (IdiPAZ), Madrid, Spain
3 Department of Geriatric Medicine, Hospital Universitario Guadalajara, Castilla y La Mancha, Spain
4 Department of Geriatric Medicine, Hospital General de Segovia, Segovia, Castilla y León, Spain
5 Department of Traumatology and Orthopaedic Surgery, Hospital Universitario 12 de Octubre, Madrid, Spain
6 Department of Geriatric Medicine, Hospital Rey Juan Carlos, Madrid, Spain
7 Geriatric Medicine Unit, Hospital Universitario Fundación Alcorcón, Madrid, Spain

Aims

The Spanish National Hip Fracture Registry (RNFC) includes patients >75 years with hip fracture admitted to Spanish hospitals. One of its quality indicators is the proportion of patients evaluated for malnutrition using the Global Leadership Initiative on Malnutrition (GLIM) criteria. The objective was to describe the profile of malnourished patients and the impact of malnutrition on the evolution of patients with hip fracture.

Methods

Prospective multicenter study of cases recorded in the RNFC from July 1, 2022, to June 30, 2023. Malnutrition was assessed using GLIM criteria and patients were classified as well-nourished or malnourished. Demographic, clinical variables and ASA score were collected, and functional (modified Functional Assessment Category scale (mFAC)) and cognitive (Pfeiffer´s Questionnaire) assessment was performed. A 30-day follow-up was realized. A multivariate analysis was performed between the variables with significance $p<0.05$ in the bivariate among all well-nourished and malnourished patients.

Results

We registered 9409 cases, 5492 (58,4%) received nutritional assessment (86.9+6.0 years, 75.6% women), of which 2523 (45,9%) were diagnosed with malnutrition according to GLIM criteria. At admission, malnourished patients were older (88 vs 86 years), came from nursing homes (30.1% vs 14.6%), had lower independent ambulation (73.3 % vs 89.6%) and higher anesthetic risk (ASA > 3) (85% vs 73.5%). During hospitalization, malnourished patients were operated on later (69.4 vs 64.6 hours), mobilized less on the first postoperative day (74.8% vs. 78.6%), had more pressure sores (6.8% vs 4.4%), higher prevalence of delirium (4AT scale) (29.2% vs 14.1%), longer hospital stay (11.2 vs 10.1 days) and greater in-hospital mortality (5.9% vs. 2.8%). At discharge, malnourished patients were prescribed less anti-osteoporotic treatment (47.6% vs. 52.3%). At 30-day follow-up, they had higher readmission rates (8.7% vs. 6.8%), mortality (10.5% vs. 5.5%), and less independent mobility (50.6% vs 68.9%), all with $p<0.05$. In multivariate analysis, factors associated with malnutrition were age (OR 1.04 95%CI 1.03-1.05 $p<0.001$), living in nursing homes (OR 1.66 95%CI 1.38-1.99 $p<0.001$), dependent prefracture mobility (mFAC >6) (OR 1.85 95%CI 1.51-2.27 $p<0.001$), delirium (OR 1.51 95%CI 1.26-1.80 $p<0.001$), pressure sores (OR 1.62 95%CI 1.20-2.19 $p<0.05$), hospital stay (OR 1.03 95%CI 1.02-1.04 $p<0.001$) and less early mobilization (OR 0.83 95%CI 0.70-0.97 $p<0.05$).

Conclusions

Older patients with a worse baseline situation are more likely to be malnourished. Malnutrition among older hip fracture patients is associated with worse outcomes: increased risk of delirium, pressure sores, longer hospital stay and lower early mobilization. It is important to assess the nutritional status of patients with hip fracture and carry out appropriate interventions.

FP – 87

WHAT ABOUT RIB FRACTURES IN OLD AND FRAIL PATIENTS?

Anette Hylen Ranhoff, Marinne Lid Kvaale, Tim Nansen , Mette Martinsen, Mads Sundet

Diakonhjemmet Hospital, Oslo, Norway

Aims

Both in medical/geriatric and orthopaedic wards we admit old and frail patients with rib fractures. They have often had a fall, have pain, complications and a poor prognosis, but this group of patients have not been subjects of much research. The aim was to describe rib fracture patients admitted to a general hospital during a 5-year period.

Methods

Data was retrieved from the patient administrative database between 2019 and 2023. All patients admitted with a rib fracture diagnosis (ICD-10: S222, S223, S224) as a main or bi-diagnosis were included. Age, sex and length of stay, as well as mortality were recorded.

Results

During this 5-year period 332 patients were admitted and diagnosed with rib fractures. The mean age of the patients was 72.8 years (range 19-101 years); 48 % were female. Rib fracture as main diagnosis was registered in 136 patients, while 196 had rib fractures as a bi-diagnosis. Age and mortality were higher in medical wards. 30-days mortality was 0.6% in surgical wards and 4.8% in medical wards. One-year mortality was 8.5 % and 25.5%, respectively. Mortality was increasing with age and in patients aged 90+ years 1/3 were dead after one year.

Conclusion

Most patients admitted to a general hospital with rib fractures are older, and the oldest and those admitted to medical wards have the highest mortality. Research is needed to find characteristics of the patients, and to develop effective care pathways for the older patients, perhaps after model of orthogeriatric care.

FP – 88

DISTAL RADIUS FRACTURE RELATION WITH OSTEOPOROSIS RETROSPECTIVE STUDY IN OUR CLINIC

Yunus Şamil Gönüldenk, Uğur Bezirgan

Ankara University

Introduction

Osteoporosis weakens bones, making them fragile and more likely to break. Often, people do not realize they have osteoporosis until they suffer a fracture. The lifetime risk of developing osteoporosis is about 50% in women and 13-25% in men. Osteoporotic fractures result in significant healthcare utilization, including 432,000 hospital admissions annually in the U.S. In the EU, the 2021 prevalence was 6.6% in men and 22.1% in women aged 50 or more.

Objective

This study investigates the prevalence and management of osteoporosis in patients over 50 who underwent surgery for distal radius fractures at our clinic between 2020 and 2024. We aim to identify opportunities to prevent further osteoporotic fractures.

Methods

We reviewed patients over 50 who had surgery for distal radius fractures at our clinic from January 2020 to June 2024. A total of 216 patients underwent surgery for distal radius fractures, with 125 over 50 years old. We collected data on demographics, fracture history, and osteoporosis treatment. The FRAX score calculated the 10-year probability of major osteoporotic fractures and hip fractures.

Results

Among 216 patients, 125 were over 50, accounting for 57%. Of these, 95 (76%) were women. Preoperatively, 7 patients (5.6%) had been diagnosed with osteoporosis and started treatment. Postoperatively, this increased to 15 patients (12%), with 3 diagnosed at our clinic's suggestion. The average FRAX score for a 10-year probability of major osteoporotic fractures was 9.22%, and hip fractures was 1.89%. Risk factors included 30 active smokers (24%), 9 ex-smokers, 20 patients with secondary risk factors for osteoporosis (16%), 4 with rheumatoid arthritis (3.2%), and 6 with a history of steroid treatment (4.8%). The average FRAX score for hip fracture probability in diagnosed osteoporosis patients was 3.34%, nearly double that of the non-diagnosed group (1.69%).

Discussion

Common risk factors for osteoporosis in our country are senile and postmenopausal osteoporosis, with glucocorticoid use as a prevalent secondary cause. Trauma type was not considered, which could be a research area. A new screening protocol for high-risk osteoporosis patients with fractures could help prevent future hip and vertebral fractures. Compared to Emily Morgan et al.'s research at Madigan Army Medical Center, our postoperative diagnosis rate of 6.4% indicates room for improvement. Orthopedic surgeons should be more vigilant about osteoporosis in fracture patients.

Conclusion

To prevent hip and vertebral fractures, we recommend regular weight-bearing exercise, cessation of smoking and excessive alcohol use, treatment for osteoporosis or osteopenia, fall prevention measures, and vision loss prevention. A multidisciplinary approach is needed to ensure high-risk patients receive appropriate screening and management for osteoporosis.

References

1. Leslie WD, Lix, LM Johansson H, Oden A, McLoskey, EV, Kanis JA for the Manitoba Bone Density Program Spine-hip discordance and fracture risk assessment: A physician-friendly FRAX enhancement. Osteoporos Int. 2010 Oct 20. [Epub ahead of print] PubMed PMID: 20959961

2. Morgan EN, Crawford DA, Scully WF, Noce NJ. Medical management of fragility fractures of the distal radius. Orthopedics. 2014 Dec;37(12):e1068-73.

3. Tuaño KR, Fisher MH, Lee N, Khatter NJ, Le E, Washington KM, Iorio ML. Analysis of Postoperative Distal Radius Fracture Outcomes in the Setting of Osteopenia and Osteoporosis for Patients with Comorbid Conditions. J Hand Surg Glob Online. 2023 May 20;5(5):601-605.

4. Kanis JA, Borgström F, Compston J, Dreinhöfer K, Nolte E, Jonsson L, Lems WF, McCloskey EV, Rizzoli R, Stenmark J. SCOPE: a scorecard for osteoporosis in Europe. Arch Osteoporos. 2013;8(1):144.

5. Ettinger B, Black DM, Dawson-Hughes B, Pressman AR, Melton LJ 3rd. Updated fracture incidence rates for the US version of FRAX. Osteoporos Int. 2010 Jan;21(1):25-33.

FP – 89

RETROSPECTIVE ANALYSIS OF CUT-OUT RISK IN PROXIMAL FEMORAL NAILING IN PATIENTS WITH INTERTROCHANTERIC FEMUR FRACTURES

Ali Baş, Ata Cem Akbaba, Olgar Birsel, Caner Günerbüyük, Mehmet Ali Deveci

Koç University School of Medicine, Department of Orthopedics and Traumatology

Introduction

Proximal femoral nailing is the preferred surgical technique for the fixation of intertrochanteric femur fractures in elderly patients with osteoporosis. One of the most prevalent mechanical failures associated with PFN is the "cut-out" of the lag screws. The literature identifies several factors influencing the risk of failure, including patient-related factors (e.g., BMI, age, type of fracture) and surgery-related factors (e.g., quality of reduction, type of nail used, positioning of the lag screw, and neck-shaft angle of the femur). This study aimed to analyse clinical variables and radiological parameters to predict the risk of the cut-out. We hypothesized that the risk of cut-out complications is reduced when the lag screw is placed centrally, the neck-shaft angle is in a valgus position, and cement-augmented implants are used.

Materials and Methods

Between 2016 and 2024, we retrospectively examined 159 patients with intertrochanteric femur fractures who underwent surgery at our clinic. This single-centre study excluded patients with femoral shaft fractures, intracapsular fractures, non-osteoporotic fractures, and those with less than three months of radiological follow-ups. One hundred three patients were included in the analysis, which evaluated the incidence of cut-outs concerning various clinical and radiological variables. Patients were assessed based on age, gender, body mass index (BMI), the AO Foundation and Orthopaedic Trauma Association classification system (AO/OTA), type of nail used (InterTAN/PFN), quality of reduction (Baumgaertner criteria), lag-screw position within the femoral head (Cleveland system), tip-apex distance (TAD), and neck-shaft angle (NSA).

Results

The incidence of cut-out in this study was 8.7%, with a higher occurrence in female patients. A significantly higher incidence of cut-out was observed when the lag screw was positioned superiorly in the femoral head on anteroposterior X-rays (p=0.005). No significant relationship was found between cut-out risk and reduction quality (p=0.294), type of PFN used (p=0.768), BMI (p=0.084), TAD (p=0.302), or NSA (p=0.764).

Conclusions

This study provides radiological evidence to predict the risk of cut-out in proximal femoral nailing. Superior positioning of the lag screw in the femoral head on anteroposterior X-rays significantly increases the risk of cut-out. Further attention to the optimal placement of the lag screw is essential to minimize this complication.

References

1. Subaşı Ö, Aslan L, Oral A, Demirhan M, Seyahi A, Lazoğlu İ. Intraoperative fluoroscopic safety assessment of femoral head implants with 3-dimensional risk parameters to minimize cut-out. Acta Orthop Traumatol Turc. 2023 Jul;57(4):134-140.

2. Jiamton C, Boernert K, Babst R, Beeres FJP, Link BC. The nail-shaft-axis of the of proximal femoral nail antirotation (PFNA) is an important prognostic factor in the operative treatment of intertrochanteric fractures. Arch Orthop Trauma Surg. 2018 Mar;138(3):339-349.

3. Çepni Ş, Subaşı İÖ, Şahin A, Bozkurt İ, Fırat A, Kılıçarslan K. Tip-neck distance ratio as a novel predictor for failure in cephalomedullary nailing of unstable trochanteric fractures (UTF). Arch Orthop Trauma Surg. 2022 Oct;142(10):2619-2626.

4. Schneider F, Oettle C, Runer A, Wagner M, Arora R, Lindtner RA. Retrospective evaluation of radiological and clinical outcomes after surgical treatment of proximal femoral fractures utilizing PFNA and PFNA augmented. Arch Orthop Trauma Surg. 2024 May 3.

FP – 90

RATIONALISING DXA REQUIREMENTS IN FRACTURE LIAISON SERVICE

Leena Rodrigues, Emily Carey, Timothy Geraghty, Rachel Crowley, Rachael Doyle, Claire Murphy, Ian Callanan

St. Vincent's University Hospital, Dublin, Ireland

Aims

To assess the role of fracture risk assessment (FRAX) scores in managing osteoporosis in fragility fracture patients in a tertiary care centre where the availability of DXA scans is limited.

Background

Osteoporosis is a metabolic bone disease that increases the risk of fragility fractures. With an ageing population globally, fragility fractures pose a substantial health concern with greater morbidity, mortality and healthcare costs for their management, with only a small amount spent on preventive services. Most at-risk patients presenting to healthcare services are not treated for osteoporosis. Fracture liaison service, an evidence-based secondary fracture prevention model, can address this treatment gap.

Methods

We conducted a retrospective audit of 100 fracture patients who received DXA scanning from 1st January to 24th May 2023. The fracture liaison nurse had identified and referred these patients for a DXA scan. We created a datasheet aligning with the guidelines from the Royal Osteoporosis Society (2019) and the National Osteoporosis Guidelines Group (UK) (2021). FRAX scores were calculated using the online calculator and compared with DXA FRAX scores. We analysed the differences in calculated FRAX scores and DXA findings to guide future clinical decisions and appropriate allocation of resources.

Results

The average time from referral to DXA scanning was 216 days, with only 4% undergoing DXA within 84 days as per guidelines. Only 24% were on treatment when they presented for a DXA scan, and 27% had a fall risk assessment done. Although 100% of vertebral and hip fracture patients were osteopenic or osteoporotic with high calculated and DXA FRAX scores, only 50% of vertebral and 38% of hip fracture patients were on treatment when presented for a DXA scan. 30 % had at least one previous fracture; however, only 33% received antiosteoporotic treatment. Fracture types consisted of vertebral (6%), hip (21%), upper limb (49%) and lower limb excluding hip (24%). Based on calculated FRAX scores, 56% of patients were at high risk and 34% at intermediate risk for a subsequent fracture. DXA scan showed 34% osteoporosis and 53% osteopenia. 13% showed normal BMD, of which 30% showed high risk, 61% intermediate risk, and 7% low risk by calculated FRAX score.

Conclusions

Given the limited resource availability for DXA, low-trauma vertebral and hip fractures could be treated directly for osteoporosis in line with NOGG (2021) guidelines without waiting for a DXA scan. The online FRAX tool may guide osteoporosis treatment initiation in all fragility fracture patients when DXA scanning is delayed or unsuitable. Developing a department-specific advanced health assessment proforma that includes evidence-based fracture and fall risk assessment tools may promptly identify and manage at-risk individuals. Prioritising DXA imaging for intermediate-risk patients may reduce delays in initiating treatment.

References

1. GBD 2019 Fracture Collaborators (2021), 'Global, regional, and national burden of bone fractures in 204 countries and territories, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019', The Lancet. Healthy longevity, 2 (9), pp. e580-e592.

2. Kanis, J.A., McCloskey, E.V., Harvey, N.C. et al. (2022) 'Intervention thresholds and diagnostic thresholds in the management of osteoporosis', Aging Clin Exp Res, 34, pp. 3155–3157.

3. Solomon, D.H., Brown, E.M., Chandler, D. et al. (2014) 'Patterns of treatment among a cohort of older low-income adults starting new medications for osteoporosis', Osteoporos Int, 25, pp. 2255–2262.

4. Walsh, M. E. et al. (2021) 'Geographical variation of emergency hospital admissions for ambulatory care sensitive conditions in older adults in Ireland 2012–2016', BMJ Open, 11(5), pp. e042779.

5. Royal Osteoporosis Society (2019) Effective Secondary Prevention of Fragility Fractures: Clinical Standards for Fracture Liaison Services. Available at: https://theros.org.uk/media/1eubz33w/ros-clinical-standards-for-fracture-liaison-services-august-2019.pdf

6. National Osteoporosis Guidelines Group (NOGG)- UK (2021) Clinical Guideline for the Prevention and Treatment of Osteoporosis. Available at: www. nogg.org.uk

FP – 91

IMPROVING BISPHOSPHONATE THERAPY COVERAGE FOR PATIENTS WITH FEMORAL FRACTURE IN THE PERI-OPERATIVE PERIOD

Ana de Matos Valadas, Marissa Hagan

Wexham Park Hospital, Frimley Health NHS Foundation Trust

Introduction

Sustaining a hip fracture is a serious and costly injury often resulting from a combination of underlying osteoporosis and falls. The use of bisphosphonate therapy in these patients is highly recommended, and evidence has shown how intravenous (IV) zoledronic acid can be a highly clinically and cost-effective treatment to patients before they leave hospital.

Aim

The aim of this retrospective study was to assess how well our Orthogeriatric service optimised a patient's bone health during hospital admission, with a view to increase bisphosphonate prescription for elegible patients with femoral fracture.

Methods

Patient data was retrospectively collected from the electronic patient record between the periods of July-December of 2022 and 2023. Selected patients were 60 years or older with a femoral fracture. The results were compared with the United Kingdom National Hip Fracture Database (NHFD) key performance indicator (KPI) for bone medication (KPI 7).

Results

In the period of July-December 2022, the mean bone protection medication coverage in this set of patients was 17,9%, compared to the national average of 34% for 2022. Given this discrepancy, bone health management in our department was reviewed and adapted, such as checking Vitamin D levels on the day of admission to hospital for earlier replacement therapy, and the introduction of high-dose Vitamin D loading protocol in September 2022. Liaison with pharmacy department in the first quarter of 2023 was of high importance, reaching an agreement that IV zoledronate is a cost-effective measure in a considerable cohort of these patients, compared to the frequent lack of compliance and side effects of alendronic acid. After these measures, the mean bone protection coverage in the period of July-December 2023 increased to 46,0%. The percentage of bone protection medication prescribed in patients that were eligible for bisphosphonate therapy was also calculated, excluding patients with a prognosis of less than 6 months, on end of life care, CrCl < 35 mL/min, previous allergy/intolerance, atypical fracture, traumatic fracture (with no risk factors for osteoporosis except age), unable to swallow, unsuitable for cannulation, or chronic hypocalcaemia despite calcium supplements. This revealed that 94,3% of the eligible patients were given bisphosphonate therapy in 2023, compared to 73,0% in 2022. The remaining of the patients that didn't receive bisphosphonate therapy were patients that either declined the medication, were awaiting DXA scan or awaiting dentist review.

Conclusions

Adapting the peri-operative practice for the management of bone health can increase utilisation of bisphosphonate therapy, particularly giving IV zoledronate before discharge from hospital after admission with a femoral fracture. Caution should be taken when interpreting NHFD KPI 7 for bone medication prescribing given its lack of consideration of those patients in which bone protection is contraindicated.

References

1. Antony Johansen, Opinder Sahota, Frances Dockery, Alison J Black, Alasdair M J MacLullich, M Kassim Javaid, Emer Ahern, Celia L Gregson, Call to action: a five nations consensus on the use of intravenous zoledronate after hip fracture, Age and Ageing, Volume 52, Issue 9, September 2023

2. Royal College of Physicians, 15 years of quality improvement: the 2023 National Hip Fracture Database report on 2022, London, RCP, 2023

FP – 93

NUTRITIONAL STATUS AND ITS EFFECT ON MORTALITY AFTER HIP FRACTURE

Betül Gülsüm Yavuz Veizi[2], Şahan Güven[1], Enejd Veizi[1]

1 Ankara Bilkent City Hospital
2 Ankara Dr. Abdurrahman Yurtaslan Oncology Training and Research Hospital

Aims

To investigate the effect of nutritional status on overall mortality in patients with a hip fracture.

Methods

Patients aged 60 years and older who underwent surgery for a hip fracture in the Department of Orthopedics and Traumatology between February 2019 and April 2023 and were included in the study. The exclusion criteria were Patients diagnosed with dementia or cancer, patients with terminal illnesses, and patients whose data could not be accessed. Patients' medical history including body mass index (BMI), nutritional status (Nutritional Risk Score - NRS 2002), comorbidities, hospital stay, and surgical outcomes were recorded. Data on mortality was obtained from hospital records and the National Death Notification System. If no date of death was provided, participants were considered "alive" from the date provided. The primary outcome was survival at one year from the day of surgery and its relationship with the patients' nutritional status. Malnutrition risk was also assessed as a NRS value ≥3.

Results

Of the admitted patients, only 445 were included for the final analysis. At the time of the study, 200 patients had died. Mean age was higher in the deceased group (82.4 vs 77.7). Fracture type and mean BMI values were comparable between the groups. Hospitalization period and NRS 2002 scores were significantly higher in the deceased group ($p=0.005$ and $p<0.001$ respectively). Malnutrition was present in 9.7% of all patients (18 vs 25 patients respectively). A multivariate Cox regression analysis showed that higher age, higher NRS 2002 scores and presence of malnutrition risk were all predictors of mortality.

Conclusion

Preoperative nutritional status as measured by the NRS 2002 and presence of malnutrition risk are strong predictors for overall mortality after hip fractures in the geriatric population. A detailed ortho-geriatric evaluation should be added to routine in-hospital care for all patients admitted with a hip fracture.

References

1. Dagnelie PC, Willems PC, Jørgensen NR. Nutritional status as independent prognostic factor of outcome and mortality until five years after hip fracture: a comprehensive prospective study. Osteoporos Int. 2024 Jul;35(7):1273-1287.

2. Mangano, K.M., Kenny, A.M. The Role of Diet and Nutritional Status in Recovery from Hip Fracture in the Elderly. Curr Nutr Rep 2016(5): 113–118 (2016).

3. Kramer IF, Blokhuis TJ, Verdijk LB, van Loon LJC, Poeze M. Perioperative nutritional supplementation and skeletal muscle mass in older hip-fracture patients. Nutr Rev. 2019 Apr 1;77(4):254-266.

FP – 94

SHOULD WE CONSIDER PERIPROSTHETIC HIP FRACTURE A FRAGILITY FRACTURE?

Fransiska Guerreiro, Mark Baxter, Simon Tilley

Southampton General Hospital

Aims

An increasing number of patients with hip replacement are frail. There is limited data on the prevalence and management of osteoporosis in this patient cohort and paucity of data on rate of osteoporosis in patients undergoing hip replacement. There is variation of practice in the assessment and management of bone health.

Methods

A retrospective review of the Hip Fracture Database in Southampton General Hospital from 2020 to 2022. We interrogated the following databases – CHIE, PACS, electronic documents. Inclusion criteria: periprosthetic fracture around a hip replacement (THR or hemiarthroplasty) Exclusion criteria: Fracture surrounding purely fixation implant e.g., nail or DHS, Implant fracture, patient from out of area due to unavailability of data, patient wanting treatment elsewhere, intraoperative fracture.

Results

Data from 126 patients were included. All patients sustained a low energy injury leading to the periprosthetic fracture. Prior to periprosthetic fracture, 38 patients had DEXA confirming osteoporosis, sustained NOF with low energy injury, documented osteoporosis, or had antiresorptive treatment for osteoporosis. Some of the patients had more than one comorbidity described above. 38/126 = 30% patients likely had osteoporosis prior to the injury. The remaining 88 patients (70%) bone health status were unknown at the time of fracture. Following periprosthetic fracture, 39 patients had DEXA –13 patients confirmed to have osteoporosis (33%), 17 osteopaenia (43%), and 9 normal (23%). Antiresorptive treatment were started on 33 patients (26%), 45 patients Calcium and Vitamin D only, 10 patients not appropriate for treatment, and 38 patients had no treatment started.

Conclusion

The cause of periprosthetic fracture is likely multifactorial. Unlike hip fracture where osteoporosis can be presumed, in our cohort only around a third of patients had osteoporosis. Our data is small and significant group of patients had unknown bone density. Further research and data is required in this field.

FP – 95

ASSESSMENT OF FRACTURED PATIENTS IN TERMS OF PATIENT-LEVEL KEY PERFORMANCE INDICATORS IN THE FRACTURE LIAISON SERVICES

Pınar Karslı Çebi[1], Rana Terlemez[1], Deniz Palamar Kadıoğlu[1], Zeynep Ülkü Akarırmak[1], Önder Aydıngöz[2], Şansın Tüzün[1]

1 İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty of Medicine, Department of Physical Therapy and Rehabilitation, Istanbul, Türkiye
2 Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Orthopaedics and Traumatology, Istanbul, Türkiye

Aim

To assess patients included in the Fracture Liaison Service (FLS) and evaluate the performance of the FLS using key performance indicators (KPIs) recommended by the International Osteoporosis Foundation for quality assessment.

Materials and Methods

The study retrospectively included 160 patients aged 50 years and older with osteoporotic fractures admitted to our FLS center between 2019 and 2023. KPI 1 is the identification of non-vertebral fractures, and KPI 2 is for vertebral fractures. KPI 3 is the investigation within 12 weeks, KPI 4 is DXA testing within 12 weeks, KPI 5 is fall risk assessment, KPI 6 is the recommendation of anti-osteoporotic medication, KPI 7 is follow-up within 16 weeks, KPI 8 is the initiation of medication within 16 weeks, KPI 9 is the initiation of strength and balance exercises, KPI 10 is follow-up after 52 weeks, and KPI 11 is ensuring data integrity. The success of KPIs and factors that may affect their success were investigated. Clinical history and demographic data of the cases, vertebral fracture level, non-vertebral fracture area, FRAX scores, DXA measurements, laboratory values, Timed Up and Go (TUG) test, and treatment preference were evaluated. The endpoint was taken as the 16th week.

Results

The success rates for the KPIs were as follows: KPI 1 was 4%, KPI 2 was 30%, KPI 3 was 100%, KPI 4 was 63%, KPI 5 was 74%, KPI 6 was 95%, and KPIs 7 and 8 were 65%. KPI 1 and KPI 2 (identification of patients) need to be improved. KPI 4 (DXA testing within 12 weeks), KPI 5 (fall risk assessment), KPI 7 (follow-up within 16 weeks), and KPI 8 (initiation of medication within 16 weeks) also require enhancement. KPI 3 (investigation within 12 weeks) and KPI 6 (recommendation of antiosteoporotic medication) were identified as areas with adequate service quality.

Conclusion

The secondary prevention of osteoporotic fractures has advanced with the introduction of FLS. However, interdisciplinary coordination needs to be improved for better detection and follow-up of patients. Ultimately, FLSs should be supported by national and regional healthcare systems to enhance their effectiveness.

Reference

1. Javaid MK, Sami A, Lems W, Mitchell P, Thomas T, Singer A, Speerin R, Fujita M, Pierroz DD, Akesson K, Halbout P, Ferrari S, Cooper C. A patient-level key performance indicator set to measure the effectiveness of fracture liaison services and guide quality improvement: A position paper of the IOF Capture the Fracture Working Group, National Osteoporosis Foundation and Fragility Fracture Network. Osteoporos Int J Establ Result Coop Eur Found Osteoporos Natl Osteoporos Found USA. 2020 Jul;31(7):1193–204.

FP – 96

TROCHANTERIC VERSUS FEMORAL NECK FRACTURES IN FEMALES: WHAT ARE THE DIFFERENCES?

Mads Sundet[1,2], Ulf Sundin[1,2], Mette Martinsen[1], Karin Hesseberg[1,4], Sylvia Sunde[1], Kristian Sydnes[1], Maren Paus[1,2], Siri Lillegraven[2]

1 Diakonhjemmet Hospital, Oslo, Norway
2 Remedy: center for treatment of rheumatic and musculoskeletal diseases, Diakonhjemmet Hospital, Oslo, Norway
3 Norwegian Hip Fracture Registry, Haukeland University Hospital, Bergen, Norway
4 Oslo Metropolitan University, Oslo, Norway

Aims

Femoral neck fractures (FNF) and trochanteric fractures (TF) are anatomically different and have different surgical treatments. Patients who sustain a subsequent contralateral fracture tend to have the same type of fracture on both sides, suggesting a correlation between patient factors and fracture type. One hypothesis is that TF are associated with more severe osteoporosis. The aim of the study was to investigate predisposing factors and differences in outcomes for the fracture types in a large clinical cohort.

Methods

We used data from a hospital-based hip fracture database at Diakonhjemmet Hospital, Norway. Consecutive female patients admitted with either a FNF or a TF during the period 2006-2023 were included, and data regarding demographics, functional status, osteoporosis treatment, and comorbidity were collected. Continuous data were analysed with t-tests and linear regression, and categorical data were analysed with chi-square tests and logistic regression.

Results

4737 women were included in the analyses, 2737 sustained a FNF (58%) and 2000 sustained a TF (42%). The mean overall age was 84.4 (SD 8.8) years, and women with TF were in average 2.9 years older than women with FNF ($p<0.001$). In patients aged >90 years, 52% of the patients had a TF. FNF was the predominant fracture in young and/or healthy patients; 68% of the patients <70 years old and 81% of those with an ASA score of 1 had a FNF. TF patients had a pre-injury NMS that was 0.5 points lower than FNF patients ($p<0.001$), this difference was 0.3 points lower when adjusted for age ($p=0.03$). A slightly higher proportion of TF-patients used anti-osteoporotic medication prior to injury (9.0% vs 7.2%, $p=0.02$), and a lower proportion of TFs were sustained outdoors (19% vs 24%, $p<0.001$). There were no differences between the groups in Charlson comorbidity index, body mass index, nursing home residence, or use of anti-osteoporotic medication after discharge. A much higher proportion of TF patients received blood transfusion compared to FNF patients (40% vs 10%, $p<0.001$).

A subset of 1099 patients had a 3-month follow-up visit. Among these patients, FNF patients had a 0.7 points higher Short Performance Physical Battery (SPPB) score ($p<0.001$), adjusted for age and pre-injury NMS, compared to TF-patients. TF patients had a larger decrease in NMS after 3 months compared to preoperatively than FNF patients, 2.1 points vs 1.5 points ($p<0.001$). There were no differences in 3- or 12-months mortality between the two groups, when adjusted for age.

Conclusion

The groups were overall quite similar, but younger women were more likely to sustain a FNF, supporting the hypothesis that more severe osteoporosis increases the risk of TF. TF patients needed more blood transfusion. The functional outcome is better for FNF after 3 months, which might indicate that the surgical treatment is more effective. Further studies are needed to clarify risk factors for sustaining each of the fractures.

FP – 97

HIGH PROTEIN MILKSHAKE VS HIGH PROTEIN DRINK INTAKE AND PALATABILITY IN FRACTURED NECK OF FEMUR ELDERLY PATIENTS

Charlotte Gall[1], Samuel Barrett[1], Abdulmalik Timamy[2], Neha Mukherjee[3], Rama Al-Ayta[4], Henry Olwes[5], Mohamed H Ahmed[5,6], Maria Panourgia[5,6]

1 Medical School, The University of Buckingham, UK
2 Department of Orthopaedic and Trauma, Milton Keynes University Hospital NHS Foundation Trust, Milton Keynes UK
3 Medical School, University of Birmingham, UK
4 Department of Emergency Medicine, Oxford University Hospital NHS Foundation Trust, Oxford, UK
5 Department of Geriatric medicine, Milton Keynes University Hospital NHS Foundation Trust, Milton Keynes, UK
6 Honorary Senior Lecturer of the Faculty of Medicine and Health Sciences, University of Buckingham, UK.

Aims

Hospitalised elderly patients with a fractured neck of femur (NOF) benefit from post-operative oral dietary supplementation to help facilitate recovery and prevent complications. Importantly, widely used dietary supplements such as high protein-high energy drinks (Ensure) are not consumed by patients due to factors such as poor taste and difficulty with using the bottle. Therefore, the study aimed to investigate whether the use of a more palatable, freshly made, high protein-high energy milkshake (Enshake), containing similar nutritional value, would lead to higher consumption levels in these patients.

Method

This was an observational prospective study undertaken on an orthopaedic ward at Milton Keynes University Hospital, United Kingdom. Elderly patients admitted with a fractured NOF were recruited. A closed loop audit took place in 2020 and 2022 to initially investigate consumption levels of Ensure in 32 and 43 patients, respectively. Consumption success was measured as greater than 50% of the contents consumed. The audit results showed that the Ensure was not consumed in 65.6% (2020 results) and 58.1% (2022 results) of the cases. Based on the audit outcome, Ensure was replaced by Enshake as the main oral nutritional supplement for all suitable patients on the ward. Enshake was prescribed by orthopaedic doctors upon admission, made fresh and delivered cold in a cup to each patient by kitchen staff twice a day, and consumption monitored and signed off on the drug chart by nurses. A subsequent closed loop audit evaluating consumption levels and palatability, i.e. liked or disliked, of Enshake took place in 2023 and 2024 involving 62 and 81 patients, respectively.

Results

Consumption success rate of Ensure modestly increased between audits from 34.4% (11/32) in 2020 to 41.9% (18/43) in 2022. When changed to Enshake, there was a dramatic improvement in the consumption success rate to 87.1% (54/62) in 2023, which further increased to 92.6% (75/81) in 2024. Palatability of Enshake was also observed with 79% (49/62) of patients in 2023 and 82.7% (67/81) in 2024 stating they liked the taste.

Conclusion

This study effectively demonstrates the significant impact palatability and accessibility has on the consumption of oral dietary supplements in elderly orthopaedic patients. Switching from Ensure to Enshake led to marked improvement in consumption rates, suggesting that Enshake's taste and ease of access is more appealing to patients. These findings emphasise the importance of considering patient preferences in nutritional supplementation, contributing to greater patient satisfaction, enhanced nutritional status, and potentially leading to improved post-operative outcomes in NOF fracture patients.

References

1. Williams DGA, Ohnuma T, Haines KL, Krishnamoorthy V, Raghunathan K, Sulo S, Cassady BA, Hegazi R, Wischmeyer PE. Association between early postoperative nutritional supplement utilisation and length of stay in malnourished hip fracture patients. Br J Anaesth. 2021 Mar;126(3):730-737.

2. J Kingdon, H Aadan, S Husain, C Atkinson, C Thomson, P Braude, 22 Design and Implementation of A Nutrition Clinical Pathway for Patients with Fractured Neck of Femur, Age and Ageing, Volume 49, Issue Supplement_1, February 2020, Pages i1–i8.

FP – 98

PATIENT'S EXPERIENCES OF SHARED DECISION-MAKING, WHEN CHOOSING TREATMENT FOR DISTAL RADIUS FRACTURE: A QUALITATIVE STUDY

Charlotte Abrahamsen[1,2], Ane Simony[1], Louise Marie Nøhr[3]

1 Department of Orthopaedic Surgery & Traumatology, Lillebaelt Hospital, Kolding, Denmark; Department of Regional Health Research, University of Southern Denamrk, Odense, Denmark
2 Department of Emergency Medicine, Lillebaelt Hospital, Kolding, Denmark
3 Department of Orthopaedic Surgery & Traumatology, Lillebaelt Hospital Kolding, Denmark

Background

Shared decision-making (SDM) was introduced in hospital Lillebaelt in 2019 and research reports that patients are more satisfied with their treatment, if they play an active role in choosing treatment. A Decision-Helper was constructed and introduced in the treatment for distal radius fractures, and to our knowledge, no previous study has reported the use of SDM in fracture treatment, moreover older patients' experiences with SDM in acute situations.

Aim

This study aimed to understand how older patients experience shared decision-making (SDM) when making decisions about the treatment of their distal radius fracture.

Materials and Methods

An exploratory, qualitative study design was performed to understand the patient's experience, during the choice of treatment with SDM. Twelve patients were recruited when they came to their first follow-up in the outpatient clinic, 5 days after the injury. Of them, ten were interviewed; three face to face and seven by telephone. All were women aged 57-87 years and all had a displaced distal radius fracture, which had been reduced in the Emergency Room.

Results

When analyzing the interviews three themes emerged: 1) An acute situation, 2) Considerations influencing the treatment choice and 3) The treatment decision.

Conclusion

In conclusion, our study represents a pioneering effort in reporting the use of Shared Decision Making (SDM) in fracture management. The sudden onset of DRF proved to be highly distressing for the patients. Providing SDM material to patients in the ED aimed to empower them and prepare them for their subsequent outpatient clinic visit. However, its effectiveness varied: some patients arrived at their outpatient appointments confident in their treatment decisions, while others remained uncertain or had not fully engaged with the provided materials. The demeanor of doctors played a crucial role in shaping patient experiences, influencing their confidence and trust in the treatment process. While SDM holds promise in fracture management, efforts to refine communication strategies, address patient uncertainties, and tailor educational resources are crucial for optimizing patient-centered care in orthopeadic settings.

FP – 99

DETERMINATION OF ELDERLY PATIENTS' POSTOPERATIVE OUTCOMES ACCORDING TO THEIR FRAILTY LEVELS BEFORE ARTHROPLASTY SURGERY

Özlem Bilik[1], Buket Çelik[1], Hale Turhan Damar[2]

1 Surgical Nursing Department in Nursing Faculty at Dokuz Eylul University in İzmir, Türkiye
2 Izmir Democracy University, Vocational School of Health Services, Elderly Care Program, İzmir, Türkiye

Aims

The aim of this study is to determine the postoperative outcomes of elderly patients according to their frailty levels before arthroplasty surgery.

Methods

The study was a descriptive, cross-sectional design. The sample of the study consisted of 193 elderly individuals who underwent arthroplasty surgery. Data were collected using the Sociodemographic Characteristics Form, Comorbidity Index, Edmonton Frail Scale, Visual Analog Scale (VAS), "4AT Score", Nutritional Risk Screening (NRS-2002), Likert-Type Fear of Falling Scale, Itaki Fall Risk Scale and Tampa Kinesiophobia Scale at the Orthopedics and Traumatology Clinic of a university hospital between June 2022 and December 2023. Ethics committee approval for the research, permission from the institution where the research was conducted, and written consent from the patients were obtained. Patients with cognitive impairment were not included in the study sample.

Results

The average age of the elderly who underwent arthroplastic surgery was 70.03±6.61 (min=60, max=95), 68.4% were women, 51.8% had undergone total knee replacement surgery, 57% had a history of falling, and 31.6% were fragile. The average postoperative first mobilization hour of the elderly was 49.86±23.35 (min=24, max=144), the postoperative pain score was 4.99±2.24 (min=0, max=9), and the total fear of movement score was 42.40±2.99 (min=33, max=51). Among the frail elderly, 14.8% had mild cognitive impairment. Age (U=7,010.5), body mass index (U=2,792.5), postoperative fear of falling (U=2,708.5), NRS2002 score (U=6,430), first mobilization (hour) (U=5.965), pre-hospital (U=6.095) and hospital fatigue level (U=6.424,5), postoperative pain (U=6.271.5), comorbidity index (U=6.483), preoperative and postoperative fall risk (U =5.793,5; U=5.781,5) and fear of movement scores (U=5.445,5) were higher than those of non-frail elderly and there was a statistically significant difference between the two groups ($p<0.05$). In addition, the difference between the risk of postoperative mild cognitive impairment (X2=13605), hospitalization in the last month (X2=6388), history of falling in the last month (X2=22692), revision surgery (X2=9176), smoking (X2=19276), alcohol use (X2 =11972), multiple drug use (X2=17453) and activities of daily living (X2=54545) was statistically significant ($p<0.05$) in frail and non-frail elderly people. There was no statistically significant difference between the two groups in terms of preoperative mild cognitive impairment (X2=0.004), surgery type (X2=1106) and fracture history in the last year (X2=.586) ($p>0.05$).

Conclusions

In this study, it was determined that the preoperative frailty level in the elderly who had arthroplastic surgery affected many internal and external factors after the surgery. It shows that preoperative frailty assessment may play a critical role in the management of the postoperative recovery process.

References

1. Zalikha AK, Pham L, Keeley J, Hussein IH, El-Othmani MM. Frailty Among Total Hip and Knee Arthroplasty Recipients: Epidemiology and Propensity Score-weighted Analysis of Effect on In-hospital Postoperative Outcomes. J Am Acad Orthop Surg. 2023 Mar 15;31(6):292-299.

2. Andrew M. Schwartz, Jacob M. Wilson, Kevin X. Farley, Thomas L. Bradbury, George N. Guild, Concomitant Malnutrition and Frailty Are Uncommon, but Significant Risk Factors for Mortality and Complication Following Primary Total Knee Arthroplasty, The Journal of Arthroplasty, 2020, 35 (10): 2878-2885.

3. Johnson RL, Abdel MP, Frank RD, Chamberlain AM, Habermann EB, Mantilla CB: Impact of frailty on outcomes after primary and revision total hip arthroplasty. J Arthroplasty 2019;34:56.e5-64.e5.

4. McIsaac DI, Beaule PE, Bryson GL, Van Walraven C: The impact of frailty on outcomes and healthcare resource usage after total joint arthroplasty: A population-based cohort study. Bone Joint J 2016;98-B: 799-805.

5. Dharmasukrit C, Chan SYS, Applegate RL 2nd, Tancredi DJ, Harvath TA, Joseph JG: Frailty, race/ethnicity, functional status, and adverse outcomes after total hip/knee arthroplasty: A moderation analysis. J Arthroplasty 2021;36:1895-1903.

6. Cesari M, Calvani R, Marzetti E: Frailty in older persons. Clin Geriatr Med 2017;33:293-303

FP – 100

SURGICAL OUTCOMES OF CABLE PLATE FIXATION IN TREATMENT OF VANCOUVER TYPE B1 AND TYPE C PERIPROSTHETIC FEMORAL FRACTURES

Cengiz Şen, Mehmet Demirel, Taha Kızılkurt, Ahmet Muçteba Yıldırım, Yavuz Sağlam, İrfan Öztürk

Istanbul University, Istanbul Medicine Faculty, Orthopaedics and Traumatology Department

Aim

This study aimed to investigate mid-to-long-term surgical outcomes of open reduction and internal fixation (ORIF) using a hybrid locking plate/cable technique for the treatment of Vancouver Type B1 and Type C periprosthetic femoral fractures (PPFs) in a consecutive group of patients from a single tertiary referral centre.

Methods

Twenty-five patients (25 PPFs; 17 female, eight male) in whom a Vancouver Type B1 or Type C PPF was diagnosed and treated by hybrid locking plate/cable technique from 2005 to 2016 were included in the study. Patients' functional status was categorized into four groups based on the Harris Hip Score (HHS) at the final follow-up: 70 = poor result; 70–80 = fair, 80–90 = good, and 90–100 = excellent. Intra-and postoperative complications were also recorded. PPF union was defined clinically as the patient's ability to bear full weight with or without assistance and radiographically as the presence of a callus bridging the fracture. Subgroup analyses were conducted according to the Vancouver Classification and type of fixation regarding the HHS and time to union.

Results

The mean age was 57 ± 16.6 (range, 17 – 82) years at the time of the primary hip replacement and 64 ± 18.7 (range, 24 – 88) years at the time of PPF. The mean follow-up was 5.6 ± 3.3 (range, 2 – 14) years from primary procedure to PPF and 6.5 ± 4.1 (range, 3 – 15) years following PPF. There were seven type B1 and 18 type C PPFs. At the final follow-up, the mean HHS was 71 ± 7.74 (range, 57 – 89). According to HHS, functional results were poor in 8 patients, fair in 14 patients, and good in 3 patients. No major intra or postoperative complications were noted. Fracture union was achieved in all patients without complication at an average of 13 ± 4.9 (range, 6 – 24) weeks. In subgroup analysis, while no significant differences were observed in the HHS ($p = 0.87$ for the Vancouver Type, $p = 0.96$ for the type of fixation), time to union differed among groups. Time to union was significantly shorter in Type B1 than in Type C PPFs ($p = 0.006$). Time to union was considerably shorter in the uncemented group compared to the cemented one ($p = 0.017$).

Conclusion

Adding cables to the locking plate can provide adequate stability to preserve fracture alignment and achieve bony union in Vancouver type B1 and C PPFs. Although union can be achieved by ORIF in such patients, a longer union time may be required for PPFs in the setting of a cemented femoral stem or Vancouver Type C.

FP – 101

TO DISCUSS THE COMPLEXITIES OF RECRUITING OLDER ADULTS TO TRAUMA STUDIES

Kathryn Lewis

Oxford University Hospital NHS Foundation Trust

Aim

To discuss the complexities of recruiting older adults to trauma studies drawing on perspectives from patients and carers, research associates and clinicians.

Background

Research in practice is promoted via national initiative and mission statements and is identified as an integral part of a patient's care. There are challenges that hinder recruitment. This presentation will explore these drawing on research, literature and our experiences.

Methods and Findings

The impact of a hip fracture is a leading cause of death and disability with quality of life significantly reduced. [1] It is important to have an evidence base to effectively and efficiently implement health policies that can improve quality of life post injury.

Qualitative interviews have highlighted challenges that individuals who are involved in clinical research encounter. Patients can be frail, disorientated and in pain. Older adults with this injury are an underrepresented group in clinical research. [2]

The World Hip Trauma Evaluation [3] offers opportunities to patients over 60 years old with this injury to be involved in research.

Capacity and time are considered barriers to recruitment and we have strategies to overcome them.

Capacity - Studies can include individuals with and without capacity to consent. The Mental Capacity Act (2005) [4] provides a framework for decision making on behalf of adults who are unable to make decisions, with guidance for research. The use of a consultee, personal or nominated, consider the wishes of the patients.

Time - Trauma patients will often be taken to theatre as an emergency, reducing time for the patient to be approached and consider participation in a study. Designing systems for rapid identification of eligible patients, enables efficient team working. Patients may find decision-making processes difficult and need support. Challenges such as retention of information, understanding research language are also evident. [5]

Other factors that can influence recruitment? Altruism, helping out, the chance of a cure all have an positive impact, barriers such as the use of technology can hinder recruitment. Many studies have web-based questionnaires, access to the internet can be limited in this group. Offering paper alternatives or involving a relative can boost inclusion.

Research nurses can develop skills and enable the patient to navigate being involved studies in a timely fashion, we endeavour to 'make it work'. Embedding research into practice promotes a strong research culture. Presence at daily meetings, making study information readily available all contribute to boosting recruitment.

Conclusions

Recruiting older patients to Trauma trials is multifactorial. Expertise, teamwork, communication skills and personal resilience are essential elements of the research delivery team armoury for sustained recruitment and development of a research culture. The resultant benefits for this patient groups are documented.

References

1. van de Ree CLP, De Jongh MAC, Peeters CMM, de Munter L, Roukema JA, Gosens T. Hip Fractures in Elderly People: Surgery or No Surgery? A Systematic Review and Meta-Analysis. Geriatr Orthop Surg Rehabil. 2017 Sep;8(3):173-180.

2. Mody L, Miller DK, McGloin JM, Freeman M, Marcantonio ER, Magaziner J, Studenski S. Recruitment and retention of older adults in aging research. J Am Geriatr Soc. 2008 Dec;56(12):2340-8.

3. Costa ML, Griffin XL, Achten J, et al (2016) World Hip Trauma Evaluation (WHiTE): framework for embedded comprehensive cohort studies BMJ Open 2016;6:e011679.

4. https://www.legislation.gove.uk/ukpga/2005/9/contents/enacted section 30

5. Phelps E et al (2019) Facilitating trial recruitment: A qualitative study of patient and staff experiences of an orthopaedic trauma trial Aug 9;20(1):492.

FP – 102

DO TRACTION-INTERNAL ROTATION X-RAYS HAVE AN EFFECT ON SURGICAL PROCEDURE IN TREATMENT OF HIP FRACTURE

Taha Furkan Yağcı[3], Emre Kocazeybek[1], Mehmet Demirel[2], Yavuz Sağlam[2], Cengiz Şen[2]

1 Haseki Training and Research Hoospital
2 Istanbul Faculty of Medicine
3 Muş State Hospital

Background

The purpose of current study is to investigate whether the traction-internal rotation x-ray used in proximal femur fractures actually alters the implant choice among 12 different levels of expertise orthopaedic surgeons.

Methods

The radiographs of 50 patients who were treated due to proximal femurfracture in our clinic were identified by retrospectively. Patient x-rays were evaluated in two different rounds, two weeks apart, by 12 orthopedic orthopedic surgeons. Each observer was asked to independently examine the anteroposterior radiographs of both hips in the first round and the traction-internal rotation radiographs in the second round. The Fleiss' Kappa statistic was used for inter-observer agreement, Cohen's Kappa coefficient was used for intra-observer agreement.

Results

Implant options were determined as total hip arthroplasty, hemiarthroplasty, proximal femur nail, long femur nail, 95° AO blade plate, anatomical plate, cannulated screw and dynamic hip screw.The intraobserver agreement was found to be moderate to substantial (κ=0.44-0.68) in consultant trauma surgeons, moderate in senior orthopedic surgeons (κ =0.47-0.56) and fair to moderate (κ=0.24-0.59) in orthopedic residents. The inter- observer agreement was moderate to substantial between consultant trauma surgeons (κ=0.56-0.62),moderate agreement between senior orthopedic surgeons and fair agreement between orthopedic residents respectively (κ =0.45, κ =0.30).

Conclusion

Traction radiography is crucial in the proper classification of proximal femur fractures in accordance with the literature. The present study shows that as professional experience increases, traction radiography increases the consistency in surgical implant selection.

FP – 103

TOTAL EXTRAPERITONEAL APPROACH IN ORTHOPEDIC SURGERY USING BCFC AND BCS IN A GERIATRIC ACETABULAR FRACTURE CASE

Vedat Öztürk, Mustafa Gökhan Bilgili

Istanbul Bakırköy Dr. Sadi Konuk Training and Research Hospital

Aims

The concepts of Both Column Fixation Corridor (BCFC) and Both Column Screw (BCS) along with the Orthopedic Total Extraperitoneal Approach (O-TEP) are highly innovative approaches in orthopedic surgery. However, the orthopedic literature lacks sufficient studies on these topics, indicating a significant gap. This case report aims to highlight how combining these innovative techniques can facilitate the use of BCFC and BCS in the treatment of acetabular fractures with O-TEP, thereby enhancing the feasibility of endoscopic techniques. Furthermore, we aim to discuss the potential advantages of BCFC and BCS concepts when used in O-TEP.

Methods

For this purpose, we present a case of a 74-year-old geriatric patient with a transverse acetabular fracture involving the posterior column. The quadrilateral surface was exposed using the O-TEP approach, and the fracture was reduced using a fully laparoscopic approach. The fixation was achieved using BCS and magic screw through percutaneous screw placement.

Results

The patient's clinical condition was followed for at least 13 months. The clinical outcomes demonstrated the effectiveness of combining these innovative techniques in the treatment of acetabular fractures, with satisfactory healing and functional recovery observed.

Conclusion

This case report illustrates that combining BCFC and BCS with the O-TEP approach can facilitate the treatment of acetabular fractures with minimally invasive techniques and enhance the feasibility of endoscopic procedures. These findings suggest potential advantages of using BCFC and BCS concepts in O-TEP, warranting further investigation and study.

FP – 104

RISK FACTORS FOR IMPLANT FAILURE IN GERIATRIC PERTROCHANTERIC FRACTURES TREATED WITH CEPHALOMEDULLARY NAIL (INTERTAN)

Emre Özmen, Ahmet Müçteba Yıldırım, Taha Furkan Yağcı, Murat Altan, Ali Erşen, Yavuz Sağlam

Istanbul Unıversity Istanbul Medicine Faculty Orthopaedics and Traumatology Department

Objectives

Intertrochanteric hip fractures are common fractures seen in elderly patients. This study aims to evaluate pre-and postoperative radiographic risk factors for early implant failure in geriatric intertrochanteric fractures treated with twin interlocking derotation and compression screw cephalomedullary nail.

Methods

136 cases operated in our institution between 2012 and 2017 with closed reduction and InterTAN nailing were retrospectively reviewed. Radiographs were evaluated for AO type, reduction type, TAD, medullary filling percentage, and implant-related complications. The minimum follow-up was 2 years.

Results

Patients were, on average, aged 79.8. 120 had AO type 31A1 fracture, 16 had AO type 31A2. The TAD was, on average, 21.9 mm. Univariate linear regression showed that types A2.2 and A2.3, anatomic or lateral reduction, and medullary filling of the nail were significantly associated with varus collapse greater than 5°. Significant regression was found, with an r2 of 0.31 according to multivariate linear regression. A multivariate binary logistic regression analysis with varus collapse as an endpoint showed that A2.2-A2.3 fractures and anatomic/lateral reduction were significantly associated with varus collapse greater than 5 degrees.

Conclusion

OTA/AO A2.2 and A2.3 fractures, anatomical or lateral reduction of the proximal fragment, and medullary filling at the level of the distal screw are significantly associated with varus collapse. Anatomical or lateral reduction of the proximal fragment seems to be the most important factor for varus collapse.

FP – 105

TRIMALLEOLER FRACTURES OF THE ELDERLY: DO FRACTURE MORPHOLOGY AND DEMOGRAPHIC CHARACTERISTICS DIFFER FROM THE YOUNG?

Batuhan Gencer, Ufuk Arzu, Turgut Dinçal, Yılmaz Kerem Akayoğlu, Deniz Gülabi

Marmara University Pendik Training and Reseach Hospital Department of Orthopaedics and Traumatology

Introduction

Ankle fractures are among the most common lower extremity injuries with an annual incidence of 187 per 100,000, of which 7% are trimalleolar fractures. In the treatment of trimalleolar fractures in the elderly, prolonged preoperative period due to comorbidities, perioperative fixation problems due to poor bone quality, and increased postoperative complication rates are the parameters to be considered. Our study aimed to investigate the fracture morphology and demographic characteristics of geriatric trimalleolar fractures and to compare them with younger patients.

Materials and Methods

Between 2018 and 2024, 100 patients who were operated with a diagnosis of trimalleolar fractures were retrospectively reviewed. Patients were grouped according to their ages as under and over 65. Fracture morphology was assessed by lateral malleolus fracture level (according to Weber Classification), posterior malleolus fragment size (ratio of fracture fragment length to distal tibia joint surface length on lateral radiograph), and presence of chaput fragment. Demographic data of the patients and complications during follow-up were also compared.

Results

Trimalleolar fractures were observed to be more common among females in the elderly ($p=0.003$). There was no difference between the groups regarding side, mechanism of injury, and complications during the follow-up ($p>0.05$). Regarding fracture morphology, no difference was observed between the groups in terms of lateral malleolus fracture level and posterior malleolus fragment size ($p>0.05$), while chaput fragment was more common in the group under 65 years of age ($p=0.047$).

Discussion and Conclusion

As with all ankle fractures, trimalleolar fractures were observed more frequently in women in the elderly, which may be the result of post-menopausal osteoporosis. Although the distribution of other fracture components appeared to be similar between the groups, we observed that quadrimalleolar fractures (chaput fragment accompanying trimalleolar fracture) were more common in younger patients. Knowledge of the fracture morphology in the elderly is important not only to prevent misdiagnosis of occult fractures but also for correct treatment planning of the elderly.

FP – 106

ANTIBIOTIC PROPHYLAXIS IN NECK OF FEMUR FRACTURE

Mohamed Wahb, Faizal Rayan

Kettering General Hospital, United Kingdom

Aims

Choosing the right antibiotics, timing of administration and duration is crucial. Wound infections come with significant health and economic costs. However, the appropriate use of antibiotics can help reduce this risk. During our daily routine, we observed that some patients had missed their post-operative antibiotic prophylactic dose, and many of our junior doctors, especially the new ones, were unaware of which antibiotics to prescribe. In our first and second cycle, we implemented some changes to address these concerns. This is the third cycle of our project done to see whether we were compliant with our recommendations.

Effective antibiotic prophylaxis is pivotal in mitigating this risk and enhancing patient outcomes. As we embark on the 3rd cycle of our clinical audit, Objective: ensure our practices align with our department protocol. Focus: Teicoplanin prescription intra & post op for surgical prophylaxis in neck of femur fractures. Goal: Optimize patient outcomes. According to the local policy of KGH, patients should have intra OP Teicoplanin & Gentamicin, and Teicoplanin within 12 hours post operative.

Methods

Retrospective study of Neck of Femur fractures
Period Mid October 2023 - January 2024
Patient ID obtained from NHFD
Data retrieved by using EPMA, Medi-viewer and anaesthetic chart.

Results and Conclusions

Total of 101 patients reviewed:
1- Teicoplanin (Teico) Administration: Intraoperative & Postoperative: 82%
2- Missed Postoperative Antibiotic Doses: 4%
3- Wrong Antibiotics Prescribed 14% 14 cases Cefuroxime: 11 cases, Co-amoxiclav: 3 cases.

We have discussed this topic in our daily trauma meeting and the MDT meeting which is held usually on every Wednesday under supervision of our consultants for discussion the NOF cases. We have raised the importance of prescribing the adequate antibiotic according to our hospital and department policy, for the doctors who are scrubbed in at theatres and the doctors who are going to follow up the NOF patients at the wards. We have done the Audit presentation in front of our colleagues, registrars and consultants to raise their awareness of our department policy. In addition, we usually check patients' drug chart to make sure they had the 2nd dose of antibiotics after operation. We are going to do the reaudit to make sure that our doctors are following the hospital and department policy. Strengthen the TWILIGHT doctor's role to make sure that the 2nd dose of PO antibiotics was prescribed when the trauma list is finished. On this way, the junior doctors have the knowledge and confidence to prescribe the antibiotics.

FP – 107

BETWEEN-HOSPITAL VARIABILITY IN THE MANAGEMENT AND OUTCOMES OF POST-OPERATIVE PERIPROSTHETIC FEMORAL FRACTURES

Alex Bottle[1], Anthony Johansen[2], Mark Baxter[1], Mohammad Aryaie[1]

1 Imperial College London
2 University Hospital of Wales

Aims

Post-operative periprosthetic femoral fractures (POPFFs) following joint replacement surgery pose complex challenges, with differences in management and outcomes across healthcare facilities but limited published information on them to inform improvement initiatives. This study aims to quantify the between-hospital variations in surgical management and short-term outcomes.

Methods

National administrative data from all NHS hospital Trusts in England were analysed for patients aged 18 and above with a primary diagnosis of POPFF between April 2016 and December 2022. Patient demographics, comorbidities, procedures, in-hospital mortality, length of stay (LOS), and emergency 30-day all-cause readmissions were extracted. Procedures were classified into four groups: revision with or without fixation, fixation without revision, other orthopaedic procedure, and no orthopaedic procedure. Multilevel models with random intercepts for hospitals and funnel plots quantified the non-random variations between hospitals in procedures and outcomes after accounting for available patient factors.

Results

Among 39,035 hospitalized patients, 66% were female, with a median age of 82. Common comorbidities included hypertension (51.7%), arrhythmias (24.3%), and chronic pulmonary disease (18.2%). Around 14% had dementia and 7.0% had delirium recorded. 20% had revision, 41% had fixation without revision, and 27% had no orthopaedic procedure during the acute admission. The median acute hospital LOS was 14 nights (IQR 7 to 23). 4.1% died in hospital. Modelling showed that significant between-hospital variation existed in treatment outcomes, with intraclass correlation coefficients for fixation without revision, revision, and no surgical procedure at 10.4%, 11.4%, and 5.1%, respectively, after adjusting for available patient factors. Funnel plots revealed many outlier hospitals for procedure choice and long LOS but few for mortality. For example, one in seven hospitals were above the upper 95% control limit for fixation, and one in six exceeded it for revision.

Conclusions

Appreciable between-hospital variation appears to exist for the management of, and some short-term outcomes following, POPFFs in England. This warrants further explanation concerning the reasons.

FP – 109

FRACTURE LIAISON SERVICE – WHAT ABOUT COSTA FRACTURES?

Ane Djuv[1,2], Oda Horpestad[1], Hege Nysted[1], Fredrik Birkeland[1], Toril Kirkhus[1]

1 Stavanger University Hospital (SUH)
2 Bergen University

Aims

"Quality register for bone fractures and osteoporosis assessment" (BeinOP) was established in 2021 at the FLS (Fracture Liaison Services) clinic at Stavanger University Hospital (SUH) in Norway. The FLS followed the Best Practise Framework and the national guidelines provided by the Norwegian Orthopaedic Association[1, 2]. From 1.June 2022, data capturing by structured record in an online software, CheckWare (CW), was implemented [3]. The registry completeness was 100% from that date. With increasing number of patients, high attendance rate (98%) and increasing waiting time, the hospital management questioned the need for all the fractures to be assessed at the FLS-clinic. Were there any fractures to be excluded? Hospitalized patients with costa fractures are often submitted as multitrauma patients, and might not be in risk of low bone mass?

Methods

Patient were identified in the local Fracture Register at SUH, included by age between 50-97 years, living in the hospital county, having a fracture, excluding fractures in skull, fingers or toes. All the fractures were treated at the Trauma Clinic and the Orthopaedic department, SUH and referred to the FLS-clinic. BeinOP quality registry data after two years (2022.06.01-2024.05.31) were analyse in regards to index fracture, T-score and need for treatment. Costa fracture were compared to other common index fractures at the FLS-clinic.

Results

After 2 years 2422 patients were registered within BeinOP registry. The median waiting time from fracture to DXA was 121 days (5% ≤8 weeks) in 2022, increasing with 24 days in 2023 (3.2% ≤8 weeks). 79% were women with a median age of 69 years (IQR 61-77) and for men 69 years (IQR 60-79). 59% had one or more fracture before the index fracture and about 3 of 4 (77%) fractures were on ground. The most frequent fractures were wrist (25%), vertebral fracture (17%), ankle (13%) and proximal humerus or hip (12%). "Other fractures" accounted for 18% and costa fractures occurred most frequently (52%) within the category. Median age for costa fracture patients were 64 years (IQR 58-73). 92% of costa fracture patients had a T-score value of -1.5 SD or less, and needed treatment according to our guidelines. Comparable, the percentage of patients with T -score of -1,5 SD with index fracture in one or more vertebra was 93%, 91% in wrist, 89% in proximal humerus and 84% in the ankle fractures. In total, 80% of all fracture patients assessed for osteoporosis at our FLS-clinic started or continued treatment against osteoporosis.

Conclusion

Patients with costa fractures are at high risk of low bone density, younger than the average patient at the FLS clinic and should be offered FLS assessment. Their risk of low bone mass are comparable to patients with vertebral fractures. Our FLS-registry, straight from the health record, provides valuable up-to-date feedback to both patient safety indicators and data to the hospital management.

References

1. Akesson, K., et al., Capture the Fracture: a Best Practice Framework and global campaign to break the fragility fracture cycle. Osteoporos Int, 2013. 24(8): p. 2135-52.

2. Frede Frihagen, A.D., Jakob Vangen Nordbø og Lene B. Solberg Behandlingsveileder ved lavenergibrudd. Behandlingsveileder ved lavenergibrudd 2022 [cited 2024 21.05.2024]; Available from: https://www.legeforeningen.no/foreningsledd/fagmed/norsk-ortopedisk-forening/faggrupper/faggruppe-for-osteoporose-og-benhelse/behandlingsveileder-ved-lavenergibrudd/.

3. Djuv, A., et al., Improving the quality of the fracture liaison service through the implementation of a structured health record. BMJ Open Qual, 2023. 12(Suppl 2).

FP – 110

COMPARISON OF PHYSICAL PARAMETERS, RISK LEVELS, SLEEP QUALITY, KINESIOPHOBIA IN POSTMENOPAUSAL WOMEN WITH FALL HISTORY

Ender Angın, Ayşen Karaman, Özde Depreli, Sevim Öksüz, Süleyman Güzelşemme

Eastern Mediterranean University

Aims

This study aimed to compare pain intensity, hand grip and lower extremity strength, balance, functional capacity, osteoporosis risk, knowledge level, kinesiophobia, and sleep quality levels of postmenopausal women with and without a history of falls.

Methods

The study included 257 postmenopausal women aged 40-65 years. The subjects were divided into two groups: those with (n=91) and those without (n=166) a history of falls. Pain intensity was assessed by visual analog scale (VAS), grip strength by hand dynamometer, lower extremity strength by 30-second Sit-Stand Test, balance level by Fullerton Advanced Balance Scale, functional capacity by 6-minute walk test, Osteoporosis risk was assessed with the Simple Calculated Osteoporosis Risk Questionnaire (SCORE), osteoporosis knowledge was assessed with the Osteoporosis Awareness Scale, kinesiophobia was assessed with the Tampa Kinesiophobia Scale, and sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI).

Results

The mean age of the participants was 56±5.31 years in the group with a history of falls and 59±5.01 years in the group without a history of falls. Pain severity (p=0.000), osteoporosis risk (p=0.019), and kinesiophobia (p=0.029) were found to be higher in individuals with a history of falls compared to those without a history of falls. Grip strength (p=0,000) and lower extremity strength (p=0.004), balance level (p=0.000), functional capacity (p=0.048), osteoporosis knowledge level (p=0,019) and sleep quality (p=0.011) were found to be higher in patients without a history of falls than in patients with a history of falls (p<0,05).

Conclusions

A history of falls is a major risk factor for fractures in postmenopausal women, and a history of falls negatively affects various physical parameters.

References

1. Hamad, B., Basaran, S., & Coskun Benlidayi, I. Osteosarcopenia among postmenopausal women and handgrip strength as a practical method for predicting the risk. Aging Clin Exp Res, 2020 Oct;32(10):1923-1930.

2. Iolascon G, de Sire A, Calafiore D, Benedetti MG, Cisari C, Letizia Mauro G, Migliaccio S, Nuti R, Resmini G, Gonnelli S, Moretti A. Multifactorial Assessment of Risk of Falling in 753 Post-Menopausal Women: A Multicenter Cross-Sectional Study by the Italian Group for the Study of Metabolic Bone Diseases. Clin Interv Aging. 2020 Jul 7;15:1077-1084.

FP – 111

AGE-BASED COMPARISON OF FRAGILITY HIP FRACTURES IN MALAYSIA: CLINICAL CHARACTERISTICS AND OUTCOMES

Malarkodi Suppamutharwyam[1], Reena Nadarajah[2], Tunku Muzafar Shah Tunku Jaafar Laksmana[2]

1 Kuala Lumpur General Hospital, Malaysia
2 Selayang General Hospital, Malaysia

Aim

This study compares clinical features and outcomes of fragility hip fractures in Malaysian patients aged <80 and ≥80.

Methods

A retrospective review of 149 patients aged ≥65 with fragility hip fractures at Selayang General Hospital (January 1, 2022 – February 28, 2023) was conducted. Patients were divided into two cohorts: those <80 and those ≥80, to compare clinical profiles, acute management, and outcomes.

Results

Of the patients reviewed, 52% were under 80 years old, and 48% were 80 or older. The mean ages were 72.4 and 84.5 years for the <80 and ≥80 cohorts, respectively ($p < 0.001$). In the <80 cohort, 65% were independent without walking aids, compared to 48% in the ≥80 cohort. The most common comorbidities were diabetes mellitus ($p = 0.006$) and hypertension. Additionally, 20% of the ≥80 cohort had osteoporosis, compared to 9% of the <80 cohort. Certain conditions were more prevalent in the <80 cohort than in the ≥80 cohort. Stroke occurred in 14% of patients <80 versus 3% in those ≥80 ($p = 0.015$). Dementia was seen in 9% of the <80 cohort and 6% of the ≥80 cohort. Cardiac diseases affected 14% of patients <80 and 11% of those ≥80 ($p = 0.039$).

Patients ≥80 years appeared frailer, with 64% classified as Clinical Frailty Scale (CFS) 5 and above, compared to 34% of those <80 ($p < 0.001$). Patients ≥80 years spent an average of 13.22 hours in Emergency department (ED) before admission, compared to 11.46 hours for those <80. Only 62% of patients ≥80 received surgery, versus 74% of younger patients. Mean time to surgery was 12 days for those ≥80 and 10 days for those <80. Delays due to operating theatre schedules affected 70% of patients ≥80 and 61% of those <80. Inadequate nutritional assessment occurred in 28% of patients ≥80 and 33% of those <80. Early mobilization rates were low, with only 35% of patients ≥80 and 47% of those <80 mobilized within 24 hours postoperatively. Despite higher frailty (CFS scores), patients ≥80 had fewer complications: post-operative anaemia (27% vs. 34%), delirium (5% vs. 9%), and venous thromboembolism (0% vs. 3%) compared to younger patients.

Over 90% of patients in both cohorts received calcium and vitamin D at discharge. However, 46% of patients ≥80 and 41% of those <80 was not prescribed anti-osteoporosis medications (AOM). Inpatient mortality was 1% for patients ≥80, with 80% discharged home, 13% to residential care, 4% to rehabilitation units, and 1% to acute medical units. For patients <80, 79% were discharged home, 13% to residential care, 6% to rehabilitation units, and 1% to acute medical units.

Conclusion

Timely optimization and prompt surgery are crucial for mobility restoration, and independence. Efforts should focus on streamlining admissions and ensuring adequate bed availability for older adults with hip fractures to prevent delays. Engaging stakeholders to optimize operating theatre and surgeon availability is also essential to reduce surgical delays.

Reference

1. Takahisa Ogawa, Haggai Schermann, Hiroki Kobayashi, Kiyohide Fushimi, Atsushi Okawa, Tetsuya Jinno, Age and clinical outcomes after hip fracture surgery: do octogenarian, nonagenarian and centenarian classifications matter?, Age and Ageing, Volume 50, Issue 6, November 2021, Pages 1952–1960.

FP – 112

THE RELATIONSHIP OF EASY FALL-INDUCED FEMORAL INTERTROCANTERIC FRACTURES AND NEUROLOGICAL DISORDERS

Kaan Tan, Yiğit Önaloğlu

Istanbul Başakşehir Çam and Sakura City Hospital

Objectives

To investigate the relationship between patients with femoral intertrochanteric femur fractures and neurological diseases causing gait and balance disorders.

Material and Methods

We retrospectively analyzed 100 mobile patients with no fracture (NITF) and 100 patients with intertrochanteric femur fracture (ITF) (mobile before the fall) who were brought to the emergency department of our hospital via 112 due to a fall from the same level in 2023.

Results

The total number of patients in both groups was 200, and each group consisted of 100 patients (50 females and 50 males). The mean age was 80 ± 10 years for the ITF group and 75 ± 10 years for the NITF group ($p = 0.90$). Neurological diseases diagnosed before the fall were analyzed in both groups. Of the patients operated on for femoral intertrochanteric femur fracture, 6 had a previous cerebrovascular event (CVE), 2 had epilepsy, 9 had Alzheimer's disease and 5 had Parkinson's disease. In the NITF group, there were 5 CVE, 4 Alzheimer, and 2 Parkinson patients.

Discussion and Conclusion

Neurological disease was found in 22% of the patients operated on for femoral intertrochanteric femur fracture, compared to 11% in a similar age population with intact hips. Patients with Parkinson's disease are frequently exposed to falls, and the association with intertrochanteric femur fractures is known (1). When the details of neurological diseases were analyzed, patients with Alzheimer's disease and Parkinson's disease constituted more than half of the groups. CVE and epilepsy are also diseases that increase the risk of falling. It is important for care providers to take additional fall precautions for patients with neurological diseases.

Reference

1. Koo HY, Cho EB, Kong SH, Han K, Lee KN, Yoo JE, Min JH, Chun S, Shin DW. Fracture risk in Parkinson's disease according to its severity and duration. Osteoporos Int. 2023 Jan;34(1):81-89.

FP – 113

ANALYSIS OF VARIOUS PARAMETERS IN PATIENTS WHO SURVIVED AND DID NOT SURVIVE FIVE YEARS AFTER HIP FRACTURE SURGERY

Cumhur Deniz Davulcu, Ulaş Yavuz, Mahmut Kürşat Özşahin, Ali Şeker, Mehmet Fatih Güven, Gökhan Kaynak, Mehmet Can Ünlü

Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Orthopedics and Traumatology

Aim

Numerous factors associated with mortality after hip fracture and its surgical treatment in elderly patients have been documented in the literature (1,2,3). The aim of this study is to compare various parameters of elderly patients who survived at least five years with those who died within five years after hip fracture surgery, to identify potential factors associated with five-year mortality.

Methods

This retrospective study involved hip fracture patients over the age of 65, treated with either arthroplasty or cephalomedullary nailing. Hospital records were analyzed, and patients were divided into two groups: the survivor group, consisting of patients who survived at least five years after surgery, and the non-survivor group, consisting of patients who died within five years following surgery. Parameters compared included age, sex, timing of surgery (daytime or nightshift), type of anesthesia (general or spinal), type of surgery (arthroplasty or cephalomedullary nailing), delay between admission and surgery (in days), and initial blood test results, including white blood cell count, red blood cell count, hemoglobin, hematocrit, platelet count, neutrophil count, lymphocyte count, blood urea, creatinine, total protein, albumin, aspartate transaminase, alanine transaminase, total and direct bilirubin, alkaline phosphatase, lactate dehydrogenase, sodium, potassium, chloride, calcium and c-reactive protein levels.

Results

The survivor group included 23 patients, while the non-survivor group included 38 patients. The mean age was 81.10 ± 8.00 years. There were 18 male and 43 female patients. The mean age of the non-survivor group was significantly higher than that of the survivor group (83.74 ± 8.21 years vs. 76.74 ± 5.43 years, $p < 0.01$). There were no significant differences between the two groups in terms of sex, timing of surgery, type of anesthesia, type of surgery, or delay between admission and surgery. No significant differences were found in any laboratory parameters, although neutrophil count was higher in the non-survivor group, with the difference approaching statistical significance (8.21 ± 3.46 in the non-survivor group vs. 6.69 ± 2.50 in the survivor group, $p = 0.07$).

Conclusions

Our results indicate that only age is significantly associated with an increased risk of mortality within five years after hip fracture surgery. Sex, type of anesthesia or surgery, delay between admission and surgery, and blood test results at admission is not associated with five-year mortality risk in elderly patients following hip fracture surgery.

References

1. Liu, Y., Wang, Z., & Xiao, W. (2017). Risk factors for mortality in elderly patients with hip fractures: A meta-analysis of 18 studies. Aging Clinical and Experimental Research, 30(4), 323–330.

2. Huette, P., Abou-Arab, O., Djebara, A.-E., Terrasi, B., Beyls, C., Guinot, P.-G., Havet, E., Dupont, H., Lorne, E., Ntouba, A., & Mahjoub, Y. (2020). Risk factors and mortality of patients undergoing hip fracture surgery: A one-year follow-up study. Scientific Reports, 10(1).

3. Klestil, T., Röder, C., Stotter, C., Winkler, B., Nehrer, S., Lutz, M., Klerings, I., Wagner, G., Gartlehner, G., & Nussbaumer-Streit, B. (2018). Impact of timing of surgery in elderly hip fracture patients: A systematic review and meta-analysis. Scientific Reports, 8(1).

FP – 114

ENHANCING QUALITY OF CARE IN NECK OF FEMUR FRACTURE MANAGEMENT THROUGH TRAUMA NURSE PRACTITIONERS

Dipak Jayesh Karavadara, Faizal Rayan, Sayyied Kirmani

Kettering General Hospital

Introduction

Fascia iliaca block (FIB) in patients with fragility neck of femur (NOF) fractures provides more effective pain control than conventional systemic analgesia. It improves patient outcomes by reducing the incidence and severity of peri-operative delirium. FIB administration is now a key performance indicator for NOF fracture care. Upon diagnosis, all NOF fracture patients without absolute contra-indications should be considered for FIB administration. The first port of call for these patients at our trust are our trauma nurse practitioners (TNPs).

Method

Our objective was to measure our current FIB administration rate as part of an ongoing quality improvement project with five previous cycles. We conducted a retrospective chart review of patients diagnosed with fragility NOF fractures at Kettering General Hospital from January to March 2024.

Results

102 patients were identified. 7 were excluded given the presence of absolute contra-indications to FIB administration. Median age was 82 years (range = 78-88 years), and male-to-female ratio 1:2.28. 85 patients (89.5%) received a FIB.

Previously we showed that patients were nearly 17 times more likely to receive a FIB when assessed by a TNP ($p = 0.002$). In this cycle, there was a 7.23% increase (88/95 in 2024; 76/89 in 2023) in patients receiving TNP assessment.

Conclusion

We improved our FIB administration rate from 13.1% to 89.5% over the course of four years in large part due to the support of our TNPs. We believe similar improvements in NOF fracture care may be realised elsewhere by having patient champions, like our TNPs.

Reference

1. Royal College of Physicians. 15 years of quality improvement: the 2023 National Hip Fracture Database report on 2022. London: RCP, 2023.

FP – 115

INVESTIGATION OF THE PREVALENCE OF FRAGILITY FRACTURES IN NURSING HOMES AND GENERAL POPULATION: A RETROSPECTIVE ANALYSIS

Cumhur Deniz Davulcu, Derya Akbaba

Istanbul University-Cerrahpasa, Cerrahpasa Medical Faculty, Department of Orthopedics and Traumatology

Aim

Our study aims to investigate the impact of fragility fractures and significance of them in nursing home patients. It seeks to provide information on whether fragility fractures pose a significant issue among different demographic groups.

Methods

Fragility fractures, often linked to conditions like osteoporosis are common among older individuals. Between January 2017 and December 2023, a retrospective analysis was conducted on 38 patients (6M,32F) with osteoporosis in a certain clinic, utilizing data obtained from medical records. Data were analyzed to determine demographic characteristics, types and locations of fractures, comorbidities and functional outcomes of study population.

The mean age of patients in study cohort was calculated as 78.3 years (ranging from 67 to 92). In all patients, an intertrochanteric femur fracture occurred following low-trauma events such as falling while standing or minor impact. All patients underwent proximal femoral nailing performed by our team. 12 (31.5%) received a diagnosis of osteoporosis through advanced postoperative examinations, while 26 patients (68.5%) already had diagnosis of osteoporosis during preoperative period.

Results

During admission, vertebral fractures were detected in only 7.8% of patients (1 M, 2 F). Additionally, distal radius fractures accompanying hip fractures were present in only 2 patients (5.2%) at the time of admission.

Of the three patients who had vertebral fractures accompanying hip fractures during the same admission, one was a nursing home resident (2.6%). During subsequent follow-up, 2 patients developed vertebral fractures (5.2%), 3 presented with contralateral hip fractures (7.8%), and 1 had a distal radius fracture (2.6%). Among the patients who presented with new fractures during follow-up, 50% were nursing home residents. In our analysis, only 13.1% of the total 38 patients diagnosed with osteoporosis and fragility fractures were nursing home residents (1 male, 4 females). The majority of fragility fractures occurred in individuals living within the community, highlighting the significance of this issue beyond institutional settings. Most common fracture sites are hip, spine and wrist, consistent with fracture patterns observed in nursing home populations. A significant portion of patients have experienced multiple fractures, indicating recurrent nature of fragility fractures.

Conclusions

Fragility fractures constitute a significant health issue affecting various segments of elderly population beyond nursing home residents. Our findings underscore necessity for comprehensive strategies to prevent and manage fragility fractures in different care settings.

Early detection of at-risk individuals, targeted interventions, and multidisciplinary approaches are necessary to mitigate impact of fragility fractures and improve outcomes for affected individuals. Further research is needed to explore effective strategies for fracture prevention and management in the elderly population.

FP – 116

EFFECT OF RECURRENT FALLS POST-HIP FRACTURE SURGERY ON SENSORY PROCESSING, PHYSICAL PERFORMANCE AND FALLS

Sena Erarslan[1,2], Onur Turan[1,4], Zeynep Bahadır[2], Barış Yılmaz[3]

1 Istanbul Atlas University
2 University of Health Sciences
3 Health Sciences University Fatih Sultan Mehmet Training and Research Hospital
4 Hacettepe University

Aims

This study aims to evaluate the sensory processing processes of older adults with and without falls after fall-related hip fracture surgery according to different patterns and to compare the relationship between physical performance, fall risk, fear of falling and depression parameters that may be related to sensory processing.

Methods

A total of 90 volunteer older adults, 50% female and 50% male, aged 65-96 years with a mean age of 76.7± 8.2 years, participated in the study. After recording basic demographic information such as age, gender, and history of falls, the Adult Sensory Processing Scale (ASPS) was used to assess sensory processing, the Short Physical Performance Battery (SPPB) for physical performance, the Timed Up and Go Test (TUG) for fall risk, the Falls Efficacy Scale (FES) for fear of falling, and the Geriatric Depression Scale (GDS) for depression.

Results

A total of 56.7% of older adults reported experiencing a recurrent fall after surgery, while 43.3% did not report any recurrent falls. Among older adults, 43.3% reported fall story in the previous three months, 56.7% reported falling in a room at home, 78.9% reported having balance problems, 54.4% reported using assistive devices for mobility, and 57.8% reported not taking measures to prevent recurrence after experiencing a fall. The physical performance ($p=0.007$), depression status ($p=0.005$), fear of falling ($p=0.012$) and fall risk ($p=0.016$) of individuals who report falls were significantly worse than whom reported a recurrent fall after surgery, in sensory processing skills; overresponsiveness to vestibular input ($p=0.08$), overresponsiveness to auditory input ($p<0.05$), and proprioceptive seeking ($p<0.01$), Underresponsiveness to Proprioceptive–Vestibular Input Affecting Postural–Motor Abilities ($p<0.01$).

Conclusions

According to the results obtained from this study, it was observed that older adults who fall again after hip fracture surgery had more difficulties in the specified areas than those who did not fall. After hip fracture surgery, factors that may pose a risk of secondary falls for older adults should be identified with a comprehensive evaluation including sensory, physical, mental and environmental factors, how the sensory areas in which older adults have difficulty are reflected in their activities of daily living should be evaluated in detail, and preventive occupational and physical therapy interventions should be planned to prevent secondary falls.

References

1. Blanche, E.I., Parham, D., Chang, M., Mallinson, T., 2014. Development of an Adult Sensory Processing Scale(ASPS). Am. J. Occup. Ther. 68, 531–538.

2. Bahadir, Z., Aran, O., Şahin, S., 2022. Cross-cultural adaptation, reliability, and validity of the Turkish Adult Sensory Processing Scale. Br. J. Occup. Ther. 85, 462–471.

3. Grue, E., Grue, E., Kirkevold, M., Ranhoff, A.H., Mowinckel, P., 2008. Sensory impairment in hip-fracture patients 65years or older and effects of hearing/vision interventions on fall frequency. J. Multidiscip. Healthc. 1.https://doi.org/10.2147/JMDH.S4126

4. Lipsitz, L.A., Manor, B., Habtemariam, D., Iloputaife, I., Zhou, J., Travison, T.G., 2018. The pace and prognosis ofperipheral sensory loss in advanced age: association with gait speed and falls. BMC Geriatr. 18, 274.

FP – 117

BONE DENSITOMETRY AND TREATMENT AFTER FRAGILITY FRACTURE IN OLDER PEOPLE WITH SEVERE MENTAL ILLNESS IN UK PRIMARY CARE

Christina Avgerinou[1], Juan Carlos Bazo-Alvarez[1], Irene Petersen[1], Patricia Schartau[1], David Osborn[2], Robert Michael West[3], Kate Walters[1]

1 Department of Primary Care and Population Health, University College London, UK
2 Division of Psychiatry, University College London, UK; Camden and Islington NHS Foundation Trust, London, UK
3 Leeds Institute of Health Sciences, University of Leeds, UK

Aim

Severe Mental Illness (SMI) is associated with increased risk of fragility fractures (FF). We aimed to investigate the effect of SMI on recorded referrals for Bone Densitometry (DXA) and prescription of osteoporosis drugs in older people who sustained a FF.

Methods

We used de-identified routinely collected UK primary care data from the IQVIA Medical Research Database. People with a diagnosis of SMI (schizophrenia, bipolar disorder, other psychosis) aged 50-99y between 1/1/2000-31/12/2018 were age- and sex- matched to unexposed (non-SMI) individuals. We selected people with recorded FF and estimated incidence of DXA and prescriptions (bisphosphonates/combined calcium vitamin D). We estimated Hazard Ratios (HR) and 95% Confidence Intervals (95% CI) based on Cox Proportional Hazards models. We stratified analyses by sex and age accounting for deprivation.

Results

We included 16,030 people with FF (SMI N=2,135; non-SMI N=13,895). Men with SMI aged 50-74y were more likely to be referred for DXA compared to their non-SMI counterparts (HR=1.40;95% CI 1.01-1.93), with no differences in men aged 75-99y or women. Men with SMI aged 50-74y were more likely to be prescribed bisphosphonates compared to non-SMI (HR=1.60; 95%CI 1.21-2.10). Women with SMI aged 75-99y were less likely to be prescribed bisphosphonates compared to non-SMI (HR=0.81; 95%CI 0.73-0.90). Men with SMI were more likely to be prescribed calcium and vitamin D compared to non-SMI (50-74y:HR=1.53;95%CI 1.22-1.92; 75-99y:HR=1.26;95%CI 1.01-1.58), with no differences seen amongst women.

Conclusions

Men with SMI aged 50-74y are more likely to be referred for DXA and be prescribed treatment following a FF compared to men without SMI. Women with SMI aged 75-99y are less likely to be prescribed bisphosphonates following FF compared to women without SMI.

FP – 118

EFFECTIVENESS OF THE NEW FALL PREVENTION PATHWAY IN OSLO, NORWAY

Ruth Aga[1], Kristin Holvik[1], Anne Johanne Søgaard[1], Haakon E Meyer[1,2]

1 Norwegian Institute of Public Health, Oslo, Norway
2 Department of Community Medicine and Global Health, University of Oslo, Oslo, Norway

Aims

Oslo has through many years had among the highest hip fracture rates in the world, however, the incidence has recently declined. The high rates inspired a new fall prevention pathway in the municipality of Oslo, based on well-established fall prevention strategies but specifically focusing on care coordination, osteoporosis treatment and targeting high-risk patients. This study aimed to evaluate its effectiveness on risk of hip fracture and long-term care in older adults with previous fall injuries.

Methods

We performed a controlled before-and-after study in the population 65+ years in Oslo, using data from Statistics Norway, the Norwegian Patient Registry, and the Electronic Patient Records of Community Health Care.

The intervention area included two boroughs in Oslo, with the remaining 13 boroughs as controls. The intervention started in 2015 and consisted of identifying seniors who had suffered a fall related injury, offering them a multifactorial fall and fracture risk assessment and tailored intervention.

Fall risk assessments were done at home by physiotherapists and occupational therapists, following a checklist. Medical assessments were offered by the general practitioner. Tailored interventions such as exercise, home safety measures, osteoporosis treatment, and medication review was offered.

The intervention period was 2015-19, while the years 2012-13 were defined as a pre-intervention period. We compared fallers in the intervention vs. control boroughs by including registered fall injuries treated at the Injury Department at Oslo University Hospital as time-dependent exposure in Cox regression. Hazard ratios (HR) with 95% confidence intervals (CI) for later hip fracture and long-term care were estimated in two separate analyses, adjusting for the pre-intervention period and sex.

Results

In the intervention period, 14,079 Oslo inhabitants aged 65+ years had a registered fall, and 705 of these suffered a later hip fracture. HR for hip fracture among registered fallers in the intervention area compared to the registered fallers in the control area was 0.95 (95% CI 0.64-1.41). The difference was statistically significant in men only (men: HR 0.45 (95% CI 0.21-0.95); women: HR 1.23 (95% CI 0.77-1.98)). The risk of admittance to long-time care was reduced for the registered fallers in the intervention area compared to the controls: HR 0.76 (95% CI 0.62-0.93).

Conclusion

Overall, the risk of later hip fracture was not significantly reduced in previous fallers in the intervention boroughs, although additional sex-stratified analyses revealed a lower risk in men who lived the intervention boroughs. However, fallers living in the intervention boroughs had significantly lower admission rates to nursing homes compared to controls.

The results suggests that the new prevention pathway may have slowed down functional decline in the 65+ population. Its contribution to the general decline in hip fracture rates in the period is unclear, but possible.

FP – 119

CAN OBSTETRIC PARAMETERS IMPROVE THE ACCURACY OF POSTMENOPAUSAL FRAGILITY FRACTURE RISK EVALUATION USING THE FRAX® TOOL?

Erdem Aras Sezgin[1,2], Aydan Sezgin[3,4], Huriye Güvenç Saçıntı[3], Elşad Osmanlı[1], Kübra Mangır[3], Koray Görkem Saçıntı[3,5]

1 Aksaray University Faculty of Medicine, Department of Orthopedics and Traumatology, Aksaray, Türkiye
2 Gazi University Faculty of Medicine, Department of Orthopedics and Traumatology, Ankara, Türkiye
3 Aksaray University Training and Research Hospital Department of Gynecology and Obstetrics, Aksaray, Türkiye
4 Ankara Etlik City Hospital Department of Gynecology and Obstetrics, Ankara, Türkiye
5 Hacettepe University Faculty of Medicine, Department of Public Health, Division of Epidemiology, Ankara, Türkiye

Aims

Relationship between osteoporosis and indicators of estrogen exposure, such as age at menarche, age at menopause, lactation duration, gravidity, and parity is being discussed.(1-4) However, the Fracture Risk Assessment (FRAX®) Tool, a method for evaluating fragility fracture risk, does not includeobstetric parameters except for early menopause.(5) The inclusion of obstetric parameters in FRAX may improve the accuracy of risk assessment. Currently, however, this has not been explored.

Based on the FRAX major osteoporotic fracture risk calculated without bone mineral density, the United Kingdom National Osteoporosis Guideline Group categorizes patients into very high-, high- and low-risk groups, and recommends a treatment algorithm.(6) Our aim is to utilize these risk groups to classify postmenopausal women who have experienced osteoporotic fractures and evaluate whether there are differences in obstetric parameters between the FRAX risk groups, particularly low- and very high-risk groups. Hence unraveling any potential role of unaccounted factors in patients who experienced fractures despite being categorized as low-risk.

Methods

After obtaining ethical committee approval, patients aged 45 and above who experienced postmenopausal distal radius, proximal femur or lumbar vertebrae fragility fractures between 2019 and 2023 and received treatment in the *x* Department of Orthopedics and Traumatology were included. Patients were contacted by phone, and the necessary parameters for calculating the FRAX score and obstetric history were queried.

Following data collection, patients were categorized into risk groups based on.(6) We evaluated whether there were differences in obstetric history (menarche age, menopause age, lactation duration, gravidity, and parity) between patients classified as low risk compared to those in the very high-risk group. Statistical analysis was performed using Jamovi software.(7) The normality of data was assessed using the Kolmogorov-Smirnov test. Data did not have a normal distribution, thus, the Mann Whitney U test was used for analysis. Significance level was set at $p<0.05$.

Results

A total of 328 patients were included. Following the calculation of the FRAX score, 85, 191 and 52 patients were classified as very high-, high- and low-risk, respectively. When comparing the very high- and low-risk groups, no significant differences were found in obstetric paramaeters ($p>0.05$); except for menopause age, which were 49.3 and 46.4 in the low- and very high-risk groups, respectively ($p<0.05$). High-risk group was also evaluated and it was found to be similar to the low-risk group ($p>0.05$).

Conclusions

Early menopause is a parameter that increases the risk estimation in FRAX and it is expected to see earlier menopause in the very high-risk group. Our results indicate that adding obstetric history and menarche age to FRAX assessment does not improve the accuracy of fracture risk evaluation.

References

1. Chang, H. K., Chang, D. G., Myong, J. P., et al. (2017). Bone mineral density among Korean females aged 20–50 years: influence of age at menarche (The Korea National Health and Nutrition Examination Survey 2008–2011). Osteoporosis International, 28(7), 2129–2136.

2. Sioka, C., Fotopoulos, A., Georgiou, A., et al. (2010). Age at menarche, age at menopause and duration of fertility as risk factors for osteoporosis. Climacteric, 13(1), 63–71.

3. Waugh, E. J., Lam, M. A., Hawker, G. A., et al. (2009). Risk factors for low bone mass in healthy 40-60 year old women: A systematic review of the literature. Osteoporosis International, 20(1), 1–21.

4. Yang, Y., Wang, S., Cong, H. (2023). Association between age at menarche and bone mineral density in postmenopausal women. Journal of Orthopaedic Surgery and Research, 18(1):51.

5. McCloskey, E. V., Johansson, H., Oden, A., et al. (2009). From relative risk to absolute fracture risk calculation: the FRAX algorithm. Current Osteoporosis Reports, 7(3), 77–83.

6. National Osteoporosis Guideline Group, U. (n.d.). Section 4: Intervention thresholds and strategy | NOGG. Retrieved from https://www.nogg.org.uk/full-guideline/section-4-intervention-thresholds-and-strategy

7. The jamovi project. (2022). jamovi (Version 2.3). Retrieved from https://www.jamovi.org/

FP – 121

EFFECT OF INTRODUCING A FRACTURE LIAISON SERVICE IN A SMALL HOSPITAL ON PATIENT OUTCOMES

Daniela Schweppenhäuser[1], Manfred Förtsch[2]

1 ev. Krankenhaus Bad Dürkheim
2 Otho 1 a

Background

Patients aged over 50 with fragility fractures of wrist, proximal humerus, spine and proximal femur and patients aged over 80 with all fractures were treated in the hospital. They have a high imminent risk of a subsequent fracture. Aims: To describe the impact from introducing an FLS on readmission rates with fragility fractures in a small hospital.

Material and Methods

In 2019 an FLS was implemented in a small hospital (235 inpatient beds) that is the only hospital in the region. The FLS identified adults fractures admitted as inpatients. All patients were referred to the local ostetologist by the FLS coordinator for DXA and ongoing treatment. We compared the readmission rate and mortality for patients admitted in 2018 and 2022 using hospital records. Differences were tested using Chi2.

Results

In 2018, 217 patients with fragility fractures were treated in the hospital, mean age 77.2 and 257 in 2022 (mean age 77.9). There was a significant reduction in readmissions due to fracture and mortality but not readmissions due to other causes (Table). Of the 15 patients with a subsequent fracture in 2022, 5 were seen in the FLS and 9 had a treatment recommendation in discharge letter.

Conclusions

Readmission rate due to fracture and mortality was significantly reduced after implementing the FLS but not readmissions for other reasons, which remained high. Further work is needed to characterize the performance of the FLS and explore other interventions to reduce readmission rates and long term sustainability of the benefits shown.

FP – 122

EFFICACY AND SAFETY OF TERIPARATIDE THERAPY IN PATIENTS WITH OSTEOPOROSIS AND FALLS

Anna Konstantinovna Ilyushchenko, Natalia Olegovna Khovasova, Ekaterina Nailevna Dudinskaya, Lyubov Viktorovna Matchekhina, Julia Sergeevna Onuchina, Anton Vyacheslavovich Naumov, Olga Nikolaevna Tkacheva

Russian Gerontology Clinical Research Center of Pirogov Russian National Research Medical University of Ministry of Healthcare of the Russian Federation. 129226, Moscow, 1st Leonova str, 16

Aim

To asses effectiveness and safety of teriparatide in older patients with osteoporosis (OP) and falls.

Materials and Methods

The study included 103 patients (97.1% women) aged 60 years and older (M=75.3±8.0 years). Inclusion criteria: OP and one or more cases of falls during the last year. Exclusion criteria: age less than 60 years; OP during glucocorticoid therapy; OP without low-energy fractures; no past medical history of falls; oncological diseases; terminal renal or liver failure.

Patients underwent blood tests, including assessment of parathyroid hormone, vitamin 25(OH)D3 levels, markers of bone formation and resorption; dual-energy X-ray absorptiometry; anabolic therapy (teriparatide 20 mcg daily), calcium supplements 1000 mg and vitamin D in an individually selected dosage were prescribed. After 12 and 24 months, the effectiveness and safety of teriparatide therapy were assessed, as well as the incidence of falls, new fractures, and changes in BMD.

Results

All patients had a history of low-energy fractures (from 1 to 13), and 81.6% of patients had multiple fractures. Charlson comorbidity index was 6.43±1.64 points. Before the start of teriparatide treatment only 61 (59.2%) patients were prescribed anti-osteoporotic therapy. The number of falls during the first year was 1.46±0.87, recurrent falls occurred in 41.7%. In 3 (2.9%) patients, severe side effects in the first three months of treatment were noted, teriparatide was discontinued, patients were excluded from the study. In 11 (10.7%) patients, mild side effects (nausea, dizziness, etc.) were noted.

During teriparatide treatment, 4 patients had 7 new fragility fractures altogether: 6 cases after 12 months, and 1 case- in the following year. There was a decrease in falls frequency after 12 and 24 months (33.3% and 29.2%, respectively, $p < 0.001$ when compared with the start of the study), as well as in chronic pain syndrome prevalence (from 72 people at the start of the study to 19 and 16 after 12 and 24 months ($p<0.001$)).

Conclusion

Our study showed the effectiveness and low incidence of adverse side effects during teriparatide therapy in geriatric patients, which makes it possible to recommend this type of medication in older age.

FP – 123

OVERCOMING A TREATMENT BARRIER – SETTING UP A HOME-BASED OSTEOPOROSIS TREATMENT WITH ZOLEDRONATE (HOTZ) SERVICE

Elaine Butler[1], Eleanor Hogan[1], Noeleen Sheridan[3], Joanna Carroll[2], Frances Dockery[1,4]

1 Fracture Liaison Service, Beaumont Hospital, Dublin 9, Ireland
2 Pharmacy department, Beaumont Hospital, Dublin 9, Ireland
3 Community Intervention Team, Dublin North, Ireland
4 Royal College of Surgeons in Ireland, Dublin, Ireland

Background

Intravenous zoledronic acid is an effective, once-annual treatment for osteoporosis and is indicated following hip fracture in particular, in addition to other osteoporotic fracture types. One of the barriers to its administration is a lack of facility to arrange subsequent doses because intravenous infusions are traditionally, exclusively hospital-based.

Methods

The Beaumont Hospital Fracture Liaison Service (FLS) collaborated with our local Community Intervention Team (CIT) to establish a protocol for home-based zoledronic acid infusions. Following an initial zoledronate dose being given in the inpatient or outpatient setting, a virtual clinic is conducted 11 months later to plan subsequent doses, as is standard practice in our unit. At these clinics, we identified those who are housebound with no means of travelling to hospital clinics as potentially eligible for the HOTZ service. A customised Zoledronic acid checklist addresses patient information, biochemical parameters, required infusion duration and includes a safety checklist for any rare adverse events since previous infusion. Education and training was provided by the FLS and the CIT lead to nursing staff responsible for administering the infusions.

Results

We have had six patients to date receive the HOTZ service with further planned. No adverse events reported. The feedback from all was extremely positive, some stating they felt everyone should have this service, and they were glad of the cost savings on taxis and avoiding the strain of family of escorting them for treatments.

Conclusions

Setting up a Home-based Osteoporosis Treatment Service is feasible and preliminary results show very high user-satisfaction with the service. We recommend that Orthogeriatric and Fracture Liaison Services consider roll out of such services.

FP – 124

SLEEP QUALITY AND FEAR OF FALLING IN PATIENTS WHO HAD KNEE ARTHROPLASTY: A PILOT STUDY

Sevim Akbal

Trakya University

Aim

Patients undergoing knee arthroplasty often experience poor sleep quality post-surgery. Studies evaluating fear of falling indicate a bidirectional and independent relationship between fear of falling and sleep quality. Literature on the relationship between fear of falling and sleep quality post-knee arthroplasty is limited. This study investigated fear of falling, sleep quality and their relationship in knee arthroplasty patients.

Methods

The study was carried out descriptively between September 2021-2022 in the orthopaedics and traumatology clinic of a university hospital with 40 patients. Data were collected using the patient information form, Richards Campbell Sleep Scale Form, International Fall Efficacy Scale.

Results

The mean pain score of the patients was 3.18±1.24; the mean total score of the sleep scale was 44.95±14.26 and the mean score of the fall scale was 40.33±11.72. It was found that there was a statistically strong relationship between fear of falling and sleep quality ($X2 = 34.444$; $p = 0.000$).

Conclusions

The data obtained showed that patients who underwent knee arthroplasty had a high rate of fear of falling and poor sleep quality. There was also a strong relationship between patients' fear of falling and their sleep quality.

References

1. Long, G., Suqin, S., Hu, Z., Yan, Z., Huixin, Y., Tianwang, L., Yang, Y., & Zhenhu, W. (2019). Analysis of patients' sleep disorder after total knee arthroplasty-A retrospective study. Journal of Orthopaedic Science, 24(1), 116–120.

2. Ran, L., Chen, Q., Zhang, J., Tu, X., Tan, X., & Zhang, Y. (2021). The multimorbidity of hypertension and osteoarthritis and relation with sleep quality and hyperlipemia/hyperglycemia in China's rural population. Scientific Reports, 11(1), 17046.

3. Gong, L., Wang, Z. H., & Fan, D. (2015). Sleep Quality Effects Recovery After Total Knee Arthroplasty (TKA) - A Randomized, Double-Blind, Controlled Study. Journal of Arthroplasty, 30(11), 1897–1901.

4. Chang, H.-T., Chen, H.-C., & Chou, P. (2016). Factors Associated with Fear of Falling among Community-Dwelling Older Adults in the Shih-Pai Study in Taiwan. PLOS ONE, 11(3), e0150612. https://doi.org/10.1371/journal.pone.0150612

5. Chen, T. Y., Lee, S., Hsu, K. W., & Buxton, O. M. (2024). Poor sleep health predicts the onset of a fear of falling among community-dwelling older adults. Sleep Health, 10(1), 137–143.

POSTERS

P – 1

NUTRITIONAL AND FUNCTIONAL STATUS OF OLDER ADULTS RECEIVING SUPPORTIVE HOME CARE: THE POWER STUDY

Catherine M Fallon, Caitriona G Cunningham, Katy Horner, Clare A Corish

University College Dublin

Aims

The POWER study aims to test the effectiveness of a whey protein oral nutritional supplement enriched with leucine and vitamin D together with an online resistance training (RT) programme, compared to online RT alone, in older adults who receive supportive home care. Baseline data for the cohort are reported here.

Methods

Randomised controlled trial wherein 40 participants aged ≥70 years who receive either informal or professional home care will be recruited. Potential participants are screened using the Strength, Assistance walking, Rising from a chair, Climbing stairs, and Falls (SARC-F) questionnaire with a cut-off score of ≥1 (out of 10) and the Physical Activity Readiness Questionnaire for Everyone (PAR-Q+). Participants are excluded if they have a MMSE of <24, liver or kidney disease. At baseline, anthropometric (body mass index, calf and mid upper arm circumferences), dietary and functional data are recorded. Primary outcomes are the Mini Nutritional Assessment-Full Form [MNA-FF] and Timed Up and Go [TUG] test. Secondary outcomes include handgrip strength, five-times sit-to-stand, 4 m gait speed, cognitive status, depressive symptoms and quality of life. Participants are randomly allocated to i) an online RT programme delivered twice weekly via Zoom for 12 weeks or ii) the online RT programme plus a protein oral nutritional supplement twice daily for the 12 weeks.

Results

Seventy-four potential participants have been screened. Twenty-four meeting the inclusion criteria have been recruited into the POWER Study. Fourteen have completed the study intervention. Mean age was 77.7 (range 70-88) years, 17 female, 7 male. At least one fall in the previous 12 months was reported by 9 (38%). Over half (54%, n=13) were at risk of malnutrition despite having a mean BMI of 28 (range 17-38) kg/m2. Mean time taken to complete TUG was 12.8 ± 4.6 seconds (ref: >20 seconds). Mean handgrip strength was 22.8 ± 10.8 kg (ref: >27 kg) for males and 13.9 ± 5.7 kg (ref: >16 kg) for females, respectively. Mean five-times sit-to-stand was 19.2 ± 6.8 seconds (ref: < 15 seconds) while 4 m gait speed was 0.85 ± 0.2 m/second (ref: ≤0.8 m/second).

Conclusion

Participants receiving home support recruited into the POWER study demonstrate poor nutritional status and physical function. The intervention study will determine the effectiveness of a whey protein oral nutritional supplement enriched with leucine and vitamin D together with an online RT programme, compared to online RT alone in older adults who receive supportive home care and are at risk of sarcopenia.

P – 2

EFFECTS OF PHYSICAL ACTIVITY LEVELS ON QUALITY OF LIFE, KINESIOPHOBIA, PAIN, AND FATIGUE IN PATIENTS WITH GONARTHROSIS

Sezen Karaborklu Argut

İstanbul University-Cerrahpaşa, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation

Aims

Gonarthrosis significantly impacts the quality of life of affected individuals, often resulting in decreased physical activity due to pain and fear of movement, known as kinesiophobia. Physical activity is widely recognized as a crucial component in the management of osteoarthritis, offering benefits such as improved joint function, reduced pain, and enhanced overall well-being. However, the relationship between physical activity levels and various factors such as quality of life, kinesiophobia, pain, and fatigue in gonarthrosis patients remains underexplored. This study aims to investigate how varying levels of physical activity influence these factors in individuals with gonarthrosis.

Methods

Woman diagnosed with primary knee osteoarthritis and aged 45-65 years were assessed for eligibility. The criteria for exclusion included: any prior invasive procedure, intra-articular injections, or physiotherapy within the last 6 months; presence of an active infection, malignancy, or systemic disorder affecting functional capabilities; and cognitive impairment. Physical activity levels of the participants were assessed using the International Physical Activity Questionnaire - Short Form (IPAQ-SF). Physical performance was evaluated with the Timed Get Up and Go Test (TUGWT), 30-Second Sit-to-Stand Test, and Stair Climbing Test durations. Pain severity was measured using an 11-point Numeric Pain Rating Scale, with 0 indicating no pain and 10 indicating the worst pain conceivable. Additionally, the following self-reported questionnaires were used: EQ-5D-3L General Quality of Life Scale, Tampa Kinesiophobia Scale (TKS), and FACIT Fatigue Scale. The TKS assesses fear of movement and re-injury and the FACIT Fatigue Scale measures the level of fatigue experienced by patients over the past week, focusing on its impact on daily activities and functioning.

Results

A total of 98 women (mean age 55.83 ± 8.48 years) with gonarthrosis were recruited. The distribution of physical activity levels among the participants was as follows: 24.5% (n=24) had a low level, 53.1% (n=52) had a medium level, and 22.4% (n=24) had a high level. The study revealed a notable correlation between IPAQ-SF scores and SCT duration ($r=0.59$; $p=0.005$). However, the analysis did not uncover any significant relationships between IPAQ-SF scores and pain levels or other functional assessments ($p>0.05$). Results showed that increased physical activity was positively associated with lower TKS and FACIT Fatigue Scale scores ($p<0.05$).

Conclusion

While higher physical activity was linked to improved stair climbing performance, there was no significant associations with pain levels or other functional assessments. However, increased physical activity was associated with lower levels of fear of movement and fatigue. These findings highlight the importance of promoting an active lifestyle in managing gonarthrosis for better functional outcomes and reduced psychological barriers.

References

1. L. Fernandes et al., “EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis,” Ann Rheum Dis, vol. 72, no. 7, pp. 1125–1135,Jul. 2013.

2. M. Shih, J. M. Hootman, J. Kruger, and C. G. Helmick, “Physical activity in men and women with arthritis National Health Interview Survey, 2002,” Am J Prev Med, vol. 30, no. 5, pp.385– 393, May 2006.

3. A. Knapik, E. Saulicz, and R. Gnat, “Kinesiophobia – Introducing a New Diagnostic Tool,” JHum Kinet, vol. 28, no. 1, p. 25, Jun. 2011.

4. Bennell K, Dobson F, Hinman R. Measures of physical perfor- mance assessments: Self-Paced Walk Test (SPWT), Stair Climb Test (SCT), Six-Minute Walk Test (6MWT), Chair Stand Test (CST), Timed Up & Go (TUG), Sock Test, Lift and Carry Test (LCT), and Car Task. Arthritis Care Res. 2011;63:S350-S370.

5. A. H. Gunn et al., “Fear of Movement and Associated Factors Among Adults With Symptomatic Knee Osteoarthritis,” Arthritis Care Res (Hoboken), vol. 69, no. 12, pp. 1826–1833, Dec. 2017.

6. G. Filardo et al., “Kinesiophobia and depression affect total knee arthroplasty outcome in a multivariate analysis of psychological and physical factors on 200 patients,” Knee Surg Sports Traumatol Arthrosc, vol. 25, no. 11, pp. 3417–3423, Nov. 2017.

7. Brophy RH, Fillingham YA. AAOS clinical practice guideline summary: management of osteoarthritis of the knee (non- arthroplasty), third edition. J Am Acad Orthop Surg. 2022;30: e721-e729.

P – 3

EXPLORING LINK BETWEEN HIP FRAGILITY FRACTURES AND OSTEOPOROSIS: IMPACT ON FRACTURE LOCATION AND PREVENTION STRATEGIES

Cumhur Deniz Davulcu, Derya Akbaba

İstanbul University-Cerrahpaşa, Cerrahpaşa Medical Faculty, Department of Orthopedics and Traumatology

Aim

This study aims to investigate the relationship between hip fragility fractures and osteoporosis, focusing on how this relationship varies according to the location of the fracture in the body. By identifying patterns in fracture locations, this research seeks to enhance the understanding of osteoporosis-related fractures and improve preventive and treatment strategies.

Materials and Methods

A retrospective cohort study was conducted, analyzing data from 95 patients aged 60 and older who presented with hip fragility fractures and were operated on at our orthopedic department between January 2018 and December 2023. In all patients, an intertrochanteric femur fracture developed due to low-energy trauma, such as a fall while standing or a minor bump. Bone mineral density (BMD) measurements were obtained using dual-energy X-ray absorptiometry (DXA) to diagnose osteoporosis in both pre-fracture and post-fracture periods. Patient demographics, fracture specifics, and BMD results were statistically analyzed to determine the correlation between fracture location and osteoporosis.

Results

Of the 95 patients, 38 were diagnosed with osteoporosis. All patients underwent proximal femoral nailing surgery performed by us. Advanced postoperative examinations revealed that 12 patients (12.6%) were diagnosed with osteoporosis, while 26 patients (27.3%) had a pre-existing diagnosis of osteoporosis before the operation. At the time of admission, only 5.2% (2 males, 3 females) of the patients had concomitant vertebral fractures. Additionally, distal radius fractures accompanying hip fractures were observed in only 4 patients (4.2%) at the time of admission. Osteoporosis was most prevalent among patients with hip fractures, followed by vertebral, wrist, and other fractures. Statistical analysis revealed a significant correlation between hip and vertebral fractures and osteoporosis ($p < 0.05$), whereas wrist and other fractures showed a weaker correlation.

The study confirms a strong relationship between osteoporosis and hip fragility fractures, highlighting the critical need for early osteoporosis screening and management in patients at risk of these fractures. The findings suggest that while wrist and other fractures are also linked to osteoporosis, the association is less pronounced, indicating that fracture location should be a key consideration in osteoporosis risk assessment and prevention strategies. Further research is needed to explore the underlying mechanisms and to develop targeted interventions for different fracture types.

P – 4

HIP FRACTURE SECONDARY PREVENTION – UNDERSTANDING CLINICIANS REASONS FOR NOT USING IV ZOLEDRONATE IN DIFFERENT COUNTRIES

YuenKang Tham[1], Antony Johansen[1,2], Opinder Sahota[3], Frances Dockery[4], Alison J Black[5], Alasdair M.J MacLullich[6,7], Kassim Javaid[2,8], Emer Ahern[9, 11], Celia Gregson[12,13]

1 University Hospital of Wales and College of Medicine, Cardiff University
2 Falls and Fragility Fracture Audit programme, Royal College of Physicians
3 Department of Health Care of Older People, Nottingham University Hospital
4 Beaumont Hospital, Dublin
5 NHS Grampian, Aberdeen Royal Infirmary
6 Ageing and Health Research Group, University of Edinburgh
7 Scottish Hip Fracture Audit (SHFA), Edinburgh
8 Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Science (NDORMS), University of Oxford
9 Cork University Hospital and University College Cork
10 Health Service Executive, Dublin
11 Irish Hip Fracture Database (IHFD), National Office of Clinical Audit
12 Musculoskeletal Research Unit, Bristol Medical School, University of Bristol
13 Older Persons Unit, Royal United Hospital NHS Trust, Combe Park

Introduction

A quarter of people with a hip fracture will sustain another fragility fracture within 5 years (half of them within 18 months), but most leave hospital with no osteoporosis treatment as secondary prevention.

To coincide with the publication of 'Call to Action: a five nations consensus on the use of intravenous zoledronate after hip fracture' Age and Ageing September 2023, we set out to explore why clinicians' had not previously been using zoledronate (IV Zol) as a first line agent in this setting.

Methods

In autumn 2023 we used online conference apps to run an online survey of 156 clinicians – prior to first presentation of our 'Call to Action' paper, at the Global Fragility Fracture Network (FFN) congress in Oslo, and British Geriatrics Society conference.

Results

Of 156 attendees at the two meetings, 99 were from UK and 57 from other countries.

Licensing of IV Zol excludes people with creatinine clearance (CrCl) <35ml/min, but the 'Call for Action' paper sets out how to use IV Zol in the quarter of hip fracture patients who have a creatinine clearance (CrCl) in the range 30-35ml/min.

Our surveys found that 9% of non-UK clinicians (27% of UK) already use a 30ml/min CrCl threshold. In addition, 26% (vs. 13%) use eGFR 30ml/min, and 51% (vs. 23%) eGFR 35ml/min as their threshold. This suggests that 87% of non-UK (63% of UK) clinicians already administer IV Zol if CrCl <35ml/min.

Non-UK clinicians were more likely to voice concern over reduced effectiveness if IV Zol was given within 14 days of fracture (86% vs. 56%), and were less prepared to consider 4mg, rather than more expensive 5mg, doses (18% vs. 42%) and single infusions without a subsequent dose (68% vs. 91%).

Conclusions

Our demonstration that many clinicians around the world are already using IV Zol, off license, in people with CrCl of 30-35 ml/min supports the 'Call to Action' paper. This should provide reassurance to others considering how to start using IV Zol in their own units, and will help many more hip fracture patients with impaired renal function to receive a medication of proven effectiveness.

We have also demonstrated that a large proportion of clinicians acknowledge and support the benefits of both early administration and single infusion IV Zol regimes.

Providing knowledge on these, along with acknowledgement of supportive studies and publications, will help encourage and significantly improve accessibility of IV Zol to patients in crucial need of it.

Reference

1. Johansen A, Sahota O, Gregson C et al. Call to action: a five nations consensus on the use of intravenous zoledronate after hip fracture. Age and Ageing, Volume 52, Issue 9, September 2023, afad172

P – 5

IMPORTANT FACTORS INCREASING MORTALITY IN ELDERLY INTERTROCHANTERIC FEMUR FRACTURES

Volkan Karaduman, Yiğit Önaloğlu

İstanbul Başakşehir Çam and Sakura City Hospital, İstanbul, Türkiye

Objective

To define the factors affecting mortality rates in operated intertrochanteric femur fracture patients over 65 years of age.

Materials and Methods

Between 2022 and 2024, 310 patients with intertrochanteric femur fractures underwent proximal femur nailing in our clinic. All patients had brought to the emergency orthopaedic service with 112 transportations due to a fall from the same level. Our retrospective study excluded high-energy traumas, pathological fractures, periprosthetic fractures, and patients under 65 years of age.

Results

Of 310 patients, 100 were male and 210 were female, with a mean age of 79.6 years (min 66, max 98). While 32 patients had no comorbidity, the remaining 278 patients had at least one comorbidity. 7 patients required a second operation (3 revisions and 4 debridements) during the whole follow-up. 115 of the 310 patients died; 42 of them were male and 73 of them were female. The mean age of the 115 patients who died was 81.4 (min 66-max 98), while the mean age of the survivors was 78.6 (min 66-max 97). Of the 278 patients with comorbidities, 107 died, and of the 32 patients without comorbidities, 8 died. The mean time from hospitalization to operation was 9.6 days in all patients, 10.4 days in deceased patients, and 9.2 days in survivors. The mean intensive care unit (ICU) stay was 2.3 days, 4.3 days for deceased patients, and 1.1 days for survivors. Of the 7 patients who were reoperated on, 3 had died. The mean duration of hospitalization was 16.6 days in all patients, 20.3 days in the deceased patients, and 14.4 days in the survivors. The mean time until the last outpatient clinic visit was 161.5 days in all patients and 92.2 days in patients who died.

Discussion and Conclusion

The mortality rate was 37% in 310 patients. There was no significant age difference between the deceased and survivors, and the mortality rate was 42% in males and 34% in females. The fact that the total length of hospitalization of the deceased patients was 1.5 times the length of hospitalization of the survivors showed that mortality increased as the length of hospitalization increased. While the mortality rate was 25% in patients without comorbidities, this rate was 38% in patients with comorbidities, indicating that mortality increased in patients with comorbidities. Since the mean length of hospitalization for the deceased and survivors was over one week, no significant difference was observed between the time from hospitalization to operation between the deceased and survivors (1). The length of the intensive care unit stay for the deceased patients was approximately four times longer than for the survivors. This clearly showed that the time spent in the intensive care unit and reoperation were associated with mortality rates. The time to the last outpatient clinic visit of the deceased patients was 92.2 days, indicating that mortality was higher in the first 3 months.

References

1. Adanır O, Albay C, and Beytemür O. Relationship Between Mortality and Timing of Surgery in Elderly Intertrochanteric Hip Fractures. Eur Arc Med Res 2017;33:23–27.

P – 6

IMPACT OF COMPLICATIONS ON QUALITY OF LIFE AFTER HIP FRACTURE

En Lin Goh

University of Oxford

Aim

Older adults are at high risk of developing complications after a hip fracture. These complications are likely to be key drivers of poorer outcome but there is little to no information on how they influence health-related quality of life (HRQoL). The aim of this study was to investigate the relationship between complications and HRQoL after hip fracture.

Methods: The World Hip Trauma Evaluation (WHiTE) study is a multi-centre, prospective cohort study that collected data from patients ≥60 years who received operative treatment for their hip fracture. Patients were followed up for 120 days after surgery. The primary outcome was HRQoL (EQ-5D-5L). Multivariate regression models were used to assess the relationship between complications and HRQoL (EQ-5D).

Results

24,523 patients were included in the analysis. The mean age the cohort was 82.9 (SD: 8.4) years and 17,186 (70.1%) were female. For surgery-specific complications, prosthesis dislocation (0.137; 95% CI: 0.076-0.197), revision surgery (0.120; 95% CI: 0.075-0.165) and deep surgical site infection (SSI) (0.086; 95% CI: 0.045-0.127) were associated with the greatest reduction in HRQoL. For general complications, cerebrovascular accident (CVA) (0.196; 95% CI: 0.136-0.256), myocardial infarction (MI) (0.120; 95% CI: 0.058-0.181) and lower respiratory tract infection (LRTI) (0.104; 95% CI: 0.087-0.122) were associated with the greatest reduction in HRQoL. The development of any of the following complications in the first 30 days were associated with significantly poorer recovery of HRQoL at 120 days: prosthesis dislocation, revision surgery, re-operation for infection, deep SSI, acute kidney injury, CVA, MI and LRTI. Of these, the strongest predictors were CVA (β-coefficient: 0.167), MI (β-coefficient: 0.141), deep SSI (β-coefficient: 0.134) and prosthesis dislocation (β-coefficient: 0.127).

Conclusions

We observed worse recovery and greater disability in patients who had a complication after hip fracture. Those with a prosthesis dislocation or deep SSI experienced similar levels of disability to those with a CVA or MI. Much of the decrease in HRQoL could be attributed to a number of surgery-specific and general complications. Interventions aimed at preventing these complications may improve outcome after hip fracture, and should be the focus of future research.

References

1. Goh EL, Lerner RG, Achten J, Parsons N, Griffin XL, Costa PML. Complications following hip fracture: Results from the World Hip Trauma Evaluation cohort study. Injury. 2020 Jun;51(6):1331-1336. doi: 10.1016/j.injury.2020.03.031. Epub 2020 Mar 30. PMID: 32268962.

2. Griffin XL, Parsons N, Achten J, Fernandez M, Costa ML. Recovery of health-related quality of life in a United Kingdom hip fracture population. The Warwick Hip Trauma Evaluation--a prospective cohort study. Bone Joint J. 2015 Mar;97-B(3):372-82. doi: 10.1302/0301-620X.97B3.35738. PMID: 25737522.

P – 7

NURSING GUIDELINE ON FRACTURE PREVENTION FOR NURSES AND NURSE PRACTITIONERS IN THE NETHERLANDS: A WORLDWIDE FIRST

Marsha Van Oostwaard[1,2], Mariska Tuut[3], Amy Den Haan[4], Ingeborg Ter Beek[2,5], Esther Appelman[2,6], Natasja Appelman - Dijkstra[7], Willeke Beex - van den Broek[8], Luc Maartens[9], Odette Van Eden[2,10], Inge Wiese[11], Thea Zaal[11], Peter Van den Berg[2,12]

1 Nurse Practitioner FLS Viecuri Venlo
2 V&VN-VF&O UTRECHT
3 PROVA Guideline Methodologist Varsseveld
4 V&VN Utrecht
5 Nurse specialist FLS ZGT Hospital Almelo
6 Nurse specialist FLS Haga Ziekenhuis Den Haag
7 University Medical Center Endocrinology MD PhD Leiden
8 Nurse Specialist GP care Achtse Barrier Eindhoven
9 GP MD PhD Achtse Barrier Eindhoven
10 Teacher and Healthcare Developer Elst
11 Patient Association Haarlem
12 Nurse Practitioner FLS PhD Reinier de Graafgasthuis Delft

Aims
Fractures (especially in spine, hip and wrist) cause pain and might lead to disability and need for nursing care. In community and primary care settings, over 18,000 nurses and nurse practitioners care for patients with potentially increased fracture risk and osteoporosis in whom fractures can be prevented by timely risk identification and preventive measures. Therefore, a clear nursing clinical practice guideline (CPG) was developed to address fracture prevention in community and primary care.

Methods
Within a governmentally funded program, the Dutch Nursing Association (V&VN) assembled a guideline panel, with representatives from different nursing specialisms, nurse practitioners, general practice, internal medicine, and patient representatives. This panel was led by an independent guideline methodologist and presided by a process lead. As a starting point, this panel focused on topics deemed important in a national survey [1] among nursing professionals working in community and primary care. Furthermore, the guideline panel developed evidence-based recommendations (using the GRADE approach and according to AGREE-II) for nursing professionals, in line with existing national multidisciplinary guidelines [2,3]. The draft guideline was sent out for consultation and pilot implementation and was with minor adjustments authorized by all stakeholders.

Results
The pilot implementation showed that the CPG provided guidance in fracture prevention. The CPG includes recommendations for patients after a recent fracture, with increased fracture risk, and patients treated with glucocorticoids. The recommendations on preventive measures include risk assessment, education and counseling, exercise, nutrition and supplements, sleep, adherence and fall prevention. The CPG emphasizes analyzing patient`s preferences and restrictions regarding nutrition and exercise and addresses medication compliance in patients taking anti-osteoporosis medications.

Conclusions
Nurses and nurse practitioners in community and primary health care meet patients with increased fracture risk daily. They fulfill pivotal observational roles in early detection, prevention (of falls and fractures) and providing tailor-made guidance on nutrition, exercise and therapy compliance. This nursing guideline contributes to optimizing care for patients with increased risk of osteoporotic fractures, with the aim to prevent fractures and optimize quality of life. To our best knowledgeIn our opinion, this is the first community nursing guideline for Fracture Prevention and Osteoporosis worldwide aiming at primary as well as secondary fracture prevention in community care.

References

1. Groot Kd, Verest W, Donker G, Francke A. Verpleging en verzorging bij mensen met osteoporose en fractuurrisico. Een knelpuntenanalyse. Utrecht: NIVEL; 2019.

2. van den Bergh JP, Geusens P, Appelman-Dijkstra NM, van den Broek HJG, Elders PJM, de Klerk G, van Oostwaard M, Willems HC, Zillikens MC, Lems WF. The Dutch multidisciplinary guideline osteoporosis and fracture prevention, taking a local guideline to the international arena. Arch Osteoporos. 2024 Apr 2;19(1):23.

3. Adams J, Wilson N, Hurkmans E, Bakkers M, Balazova P, Baxter M, et al. 2019 EULAR points to consider for non-physician health professionals to prevent and manage fragility fractures in adults 50 years or older. Ann Rheum Dis. 2021;80(1):57-64.

P – 9

DUTCH SECONDARY FRACTURE PREVENTION COURSE FOR NURSES: IMPROVED GRADUATION IF IN THEIR PROFESSIONAL ASSOCIATION`S HANDS

Peter van den Berg[1,2], Marsha van Oostwaard[3], Mariëlle van Echtelt[1,4],Esther Appelman[1,5], Josje Hamers[1,6], Ingrid Draaijer[1,7]

1 V&VN-VF&O (Boardmember) Utrecht
2 Nurse Practitioner FLS PhD Reinier de Graaf Gasthuis Delft
3 Nurse Practitioner FLS VieCuri Venlo
4 Nurse Specialist FLS Antonius Ziekenhuis Utrecht
5 Nurse Specialist FLS Haga Medisch Centrum Den Haag
6 Physician Assistant `s Heerenloo Apeldoorn
7 Nurse Practitioner FLS Ommelander Ziekenhuis Groningen Scheemda

Aims

An initiative aimed at facilitating a traditional training course for nurse specialists (NS), nurse practitioners (NP), and physician assistants (PA) to reinforce their position as Fracture Liaison Service (FLS) health care professionals in the Netherlands.

Methods

Since 2012, Dutch FLS care NSs, NPs and PAs received their education from an educational institution. Despite publicizing the course, a well-attended and stable continuous program could not be realized. After an initiative of the Osteoporosis Patient Association in 2020 a call for action was reported by the Dutch National Healthcare Institute`s “Zinnige Zorg” to improve Dutch FLS care which was multidisciplinary stakeholder`s endorsed [1]. Being not satisfied with the results of the educational institution with regard to the outflow of students the board of the Dutch Nurse Professionals Association on Secondary Fracture Prevention VF&O (member of the Dutch National Nursing Association V&VN) developed independently a comprehensive 4-day classroom course. This non-disclosed self-funded course covers all aspects of secondary fracture prevention, including medical, nursing, organizational, and quality aspects [2] and can accommodate 20 students annually. The teaching materials are based on accepted Dutch guidelines on Fracture and Falls prevention and rephrased as guidelines changed, up to the latest version in 2022 [3]. Seventeen experts are involved in the program, leading to 36 hours lesson and contact hours per course. The course will have its 5th edition in 2024 and despite previous assumptions again there is great interest to participate. To intensify optimal cooperation, per edition one Dutch Patient Association nurse board member is invited to participate.

Results

Since its inception by V&VN-VF&O, 75 healthcare professionals have become fully educated (annually 19 graduates) to take care of high quality secondary fracture prevention and osteoporosis care in line with the Dutch National Guidelines at FLS facilities throughout the Netherlands being the outcome of the four subsequent annual courses. Comparing these results with the previous institute`s course this only resulted in no more than 45 students graduating from 2012 to 2020 (annually on average 6 graduates). Of the 75 V&VN-VF&O course graduated students (52 NSs, 16 NPs, 6 PAs and 1 physician), all are currently active in FLS care.

Conclusions

A nationwide independently developed uniform course, its high quality, and lack of disclosures lead to high attendance and appreciation. The fact that graduated trainees from this course are currently active in secondary fracture prevention underlines the empowerment and position of this sub-specialty among nurse specialists, nurse practitioners and physician assistants. High attendance and appreciation are in line with (inter)national goals to optimize FLS care by nurse specialists, nurse practitioners and physician assistants.

References

1. https://www.zorginstituutnederland.nl/publicaties/rapport/2020/08/11/zinnige-zorg-verbetersignalement-osteoporose (Dutch, 29-12-2023)

2. https://www.venvn.nl/afdelingen/vallen-fracturen-osteoporose/cursus-osteoporose-en-fractuurpreventie-2023/ (Dutch, 29-12-2023)

3. van den Bergh JP, Geusens P, Appelman-Dijkstra NM, van den Broek HJG, Elders PJM, de Klerk G, van Oostwaard M, Willems HC, Zillikens MC, Lems WF. The Dutch multidisciplinary guideline osteoporosis and fracture prevention, taking a local guideline to the international arena. Arch Osteoporos. 2024 Apr 2;19(1):23. doi: 10.1007/s11657-024-01378-3. PMID: 38564062; PMCID: PMC10987374.

P – 11

TRENDS IN PROXIMAL FEMUR FRACTURES: HOSPITALIZATION, MORTALITY, AND INCIDENCE IN PORTUGAL 2006-2010 AND 2018-2022

Georgina Pimentel[1, 2], Andréa Marques[1, 3], Paulo Lourenço[4, 5], José António Pereira da Silva[1, 6]

1 Rheumatology Department, Coimbra Local Health Unit
2 Innovation and Development Centre of Lisbon, Nursing School of Lisbon
3 Nursing Sciences Research Unit, Nursing School of Coimbra
4 Clinical Coding and Auditing Office, Coimbra Local Health Unit
5 Orthopaedics Department, Coimbra Local Health Unit
6 CBR - Coimbra Institute for Clinical and Biomedical research, Faculty of Medicine, University of Coimbra

Objectives

To analyse the episodes of Proximal Femur Fractures (PFF) in hospitals of the National Health Service in Mainland Portugal, focusing on incidence, age, sex, length of hospital stay, and mortality rate over the last 5 years, and to compare these findings with the period from 2006-2010[1].

Methods

Data from all inpatient episodes from hospitals of the National Health Service in Mainland Portugal were included, encompassing patients aged 40 to 99 years with diagnosis codes 820 (ICD-9-CM) between 2006-2010 or S720 (ICD-10-CM) between 2018-2022.

Results

The total number of hospitalisations for Proximal Femur Fractures increased by 41,6% in this interval- from 51.701 in the 2006-2010 period to 73,216 in the 2018-2022 period, with an average increase of 238 *vs* 245 additional cases each year. The majority of patients were female (76% *vs* 75%), with a mean age at admission of 81.3 vs 82.9 years for women and 76.6 vs 78.5 years for men. The average in-hospital mortality increased from 5.1% *vs* 5.8%, as did the average length of stay for both genders (Women: 14.2 *vs* 15.3 days; Men: 15.2 *vs* 17.1 days).

The average annual Portuguese population decreased in this interval (10.047.685 *vs* 9908283), but the population aged 40+ increased in percentage (51,6% *vs* 59,5%) and absolute numbers (5.18 vs 5.89 million).

The overall average incidence was 200 vs 261 per 100,000 inhabitants. The incidence rate per 5-year age groups, showed an increase in incidence among in all age-groups between 40-74 years and a decrease in the age-groups between 75-99 years. Overall, the absolute number of PFFs observed in the 2018-2022 period was higher than anticipated based on the incidence rates of 2006-2010 for the first age range (≤74) and lower than expect for the older group (75+)

Conclusions

The study shows that the total number of Proximal Femur Fractures continues to increase in Portugal, as do the average age of patients, in-hospital mortality, and length of hospital stay.

Our data suggest that prevention in people under the age of 75 needs to be stressed, in parallel with deeper efforts in ages above this limit.

Overall, these number demonstrate the remarkable challenge that fragility fractures pose to the Portuguese healthcare system, underlying the urgent need for an integrated national policy against osteoporosis, from primary prevention to optimal care of fracture victims.

Reference

1. Marques A, Mota A, Canhão H, et al. A FRAX model for the estimation of osteoporotic fracture probability in Portugal. Acta Reumatol Port. 2013;38(2):104-112.

P – 12

THE EFFECT OF FRAGILITY FRACTURE INTEGRATED REHABILITATION MANAGEMENT IN HIP FRACTURE PATIENTS WITH COGNITIVE IMPAIRMENT

Kyung Mook Seo[2], Ryeojin Lee[1], Yeong Kyun Bae[1], Jae-Young Lim[1]

1 Seoul National University Bundang Hospital
2 Bumin Hospital

Background and aims

Hip fracture is a geriatric disease causing multiple impairments in mobility and activities of daily living (ADL). Multidisciplinary rehabilitation after surgical treatment has been emphasized to achieve ambulatory function and improve quality of life. Physical and cognitive impairment often coexist in the geriatric population, and impaired cognition poses significant challenges to rehabilitation courses. This study aims to compare the changes in functional outcomes of patients with or without cognitive impairment who received fragility fracture integrated rehabilitation management (FIRM) after hip fracture surgery.

Methods

This study is a multicentre prospective observational study including patients older than 65 years old who had experienced hip fracture surgery. All patients underwent the FIRM program during the 2-week hospital stay after the surgery. A total of 77 patients were categorized into two groups according to the presence of cognitive impairment, defined by the MMSE score adjusted for age and educational level. Main outcome measures included Koval and Functional Ambulatory Category (FAC) scores for ambulatory function. Other secondary outcomes were also compared to assess physical performance, ADL, and quality of life. Outcomes were measured at rehabilitation admission, at discharge, at 3 and 6-month follow-ups.

Results

Among all patients, both primary and secondary outcomes significantly improved over time ($p<0.001$). Patients with cognitive impairment and with normal cognitive function did not differ significantly in terms of the time course of improvement in Koval and FAC scores. The main effect of cognitive function in FAC scores was attributable to the baseline differences ($p=0.002$), and the two groups did not differ significantly regarding final ambulatory function ($p=0.111$). On the other hand, the cognitive impairment group showed lower improvements in the time course of improvement in ADL. Also, the two groups showed significant difference in the final evaluation of secondary outcomes ($p<0.001$).

Conclusion

The present study found that the FIRM program was effective in promoting mobility recovery in older patients with hip fracture, either with or without cognitive impairment. However, patients with impaired cognitive function showed poor recovery over time regarding ADL. These findings underscore the need for additional care and comprehensive rehabilitation after hip fracture to improve functional outcomes in this population.

References

1. Kang JH, Lee G, Kim KE, Lee YK, Lim JY. Determinants of Functional Outcomes Using Clinical Pathways for Rehabilitation After Hip Fracture Surgery. Ann Geriatr Med Res. 2018 Mar;22(1):26-32.

2. Resnick B, Beaupre L, McGilton KS, Galik E, Liu W, Neuman MD, Gruber-Baldini AL, Orwig D, Magaziner J. Rehabilitation Interventions for Older Individuals With Cognitive Impairment Post-Hip Fracture: A Systematic Review. J Am Med Dir Assoc. 2016 Mar 1;17(3):200-5.

3. Ariza-Vega P, Lozano-Lozano M, Olmedo-Requena R, Martín-Martín L, Jiménez-Moleón JJ. Influence of Cognitive Impairment on Mobility Recovery of Patients With Hip Fracture. Am J Phys Med Rehabil. 2017 Feb;96(2):109-115.

P – 13

ESTABLISHING A FRACTURE LIAISON SERVICE IN A CENTER FOR THE MUSCULOSKELETAL SYSTEM AT THE CANTONAL HOSPITAL BASELLAND

Maria Pfefferle, Claudia Haag, Adrian Stuetzle, Christian Bernhard Frank

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland

When dealing with patients having osteoporotic fractures in an aging society the need for co-management on specialized wards with geriatric expertise is well accepted. However, osteoporotic fractures also occur in patients without geriatric syndromes. Here, we want to point out why and how a dedicated Center for the Musculoskeletal System realized the need of a fracture liaison service.

Methods

First, a market analysis was carried out with regard to service providers for osteoporosis treatment and prophylaxis. Then the numbers of fracture patients over 50 (femal) respectively 60 (male) was calculated. Next, hospital specialists in geriatrics, endocrinology, radiology and others were contacted with the idea to establish a network for patients with osteoporotic fractures.

Results

Market analysis revealed only one outpatient clinic specialized in osteology being a well-established FLS. Other providers were of different disciplines like family practitioners, gynecologists, oncologists, nephrologists or endocrinologists taking care of own or administered patients. The number of relevant fractures and in-house patients in our institution to be screened was 800-1.000 per year. Round table discussions with associated specialists of the hospital showed that the number of patients was much too high for existing structures. Consequently, an Fracture Liaison Service (FLS) with an extended group of experts was planned and established. The whole process took about 9 month. Key points were involvement of in-house specialists, networking with colleagues in private practice, working together in a virtual hospital unit with defined interfaces, building synergies and offering a full service. Actually 1 internist, 1-2 endocrinologist, 1 advanced practical nurse, 1 medical practitioner, 2-3 orthopedic surgeons, 1-2 geriatricians and the radiology department were involved in the newly formed outpatient clinic together offering 16-20 consultation hours a week.

Conclusion

The number of potentially osteoporotic fractures was higher than expected. To deal with this amount of patients' needed a well-functioning structure, like described in certified FLS. The most efficient and cost-effective way was to build up a virtual network with providers from different institutions using synergies and existing skills and knowledge. To keep the system running we needed an FLS-Coordinator, Time-Slots, rooms, marketing and the willingness to share work force, patients and structures of all shareholders.

P – 15

EDUCATION USING NOTICES AND POSTERS DISPLAYED ACROSS THE WALLS OF HOSPITAL WARDS -IS IT EFFECTIVE?

Amunpreet Sahota[1], Pramudi Wijayasiri[2], Htet Than[2], Mosin Munir[2], Opinder Sahota[2]

1 University of East Anglia
2 Nottingham University Hospitals NHS Trust

Aims

Notices and posters displayed across the walls of hospital wards are commonly used for delivering essential information to staff, patients, and patients' relatives and can contribute to better communication, patient safety, and overall hospital experience. These are more visually engaging than leaflets, however the effectiveness of delivering information via this method and understanding what is important, is relatively unexplored.

Methods

We undertook a service improvement project to determine:
1. Whether notices and posters displayed across the walls of hospital wards are effective in delivering information?
2. What information is important?
3. How interviewees want information to be delivered?
Sixty-eight staff (20 doctors, 20 health care assistants, 18 nurses, 4 physiotherapists, 3 occupational therapists, 3 dieticians) and 32 patients/their relatives were interviewed across 3 trauma and orthopaedic wards, followed by more detailed follow up questionnaires to a further 20 participants (10 staff and 10 patients/patients' relatives).

Results

1. When asked to recall any 3 notices /posters displayed, only 23% (23/100) of all participants were able to recall any 3 of the 50 displayed notices / posters. 24% of staff (16/68) and 22% of patients/patient's relatives (7/32) (p=0.44). There was no significant difference in recollection between staff disciplines (p=0.53). Of those who could recall, 34% of interviewees did not find the information useful, and 42% noticed some of the information they recalled was out of date.
2. When asked what information was important, the most common answers for staff were grouped into hospital guidelines, management of delirium and falls and lists of critical medications. For patients / patients' relatives, an explanation of the discharge pathway, rehabilitation, and information related to exercises after fracture.
3. When asked how else you like would information delivered to you, the most common answers were digital alternatives like interactive screens, tablets, and personal mobile apps; less common were teaching sessions.
Overall, interviewees felt the overloading of the walls with notices/posters made the ward look cluttered, making the hospital environment feel more chaotic and less comforting. When asked how you think ward walls should be used, the most common answers were paintings and photographs.

Conclusion

The majority interviewed were unable to recall at least 3 of the 50 notices / posters displayed across the ward. There is a need for education and information sharing and many would consider alternative methods of presentation, in particular digital formats. The debate on whether to continue using wall displays for educational purposes in hospitals is multifaceted. They allow greater inclusivity, universal reach and cheap to produce but at the same time information overload reduces the effectiveness of key messages and have negative effective both aesthetically and to the environment.

P – 17

TWO OUT OF THREE PATIENTS DO NOT REGAIN MOBILITY THE FIRST THREE MONTHS AFTER A HIP FRACTURE: A LONGITUDINAL STUDY

Karin Hesseberg[1,2], Anette Hylen Ranhoff[1], Mads Sundet[1], Ulf Sundin[1], Siri Lillegraven[1], Mette Martinsen[1], Maren Paus[1], Sylvia Sunde[1]

1 Diakonhjemmet Hospital, Oslo, Norway
2 Oslo Metropolitian University, Oslo, Norway

Aim

Hip fracture is a risk factor for functional impairment, loss of independence, and death. Significant costs are associated with the treatment of older individuals with hip fractures. Increased knowledge entailing functional impairment is valuable in the development and initiation of healthcare services for this group of frail older adults. The aim of this study was to investigate to what degree hip fracture patients regained their mobility 3 months after injury.

Method

Data were retrieved from a quality database containing information regarding all patients treated for a hip fracture at a hospital in Oslo, Norway between 2014 and 2023. The study included patients who were 65 years or older when admitted, with data available on the New Mobility Score (NMS) from the pre-fracture status (collected at the initial hospital stay) and three-months post-operatively. Pre- and three-month post injury NMS scores were compared using t-tests of differences of means. Logistic regression analysis was used to explore factors associated with the probability of regaining mobility (NMS three-months post injury).

Results

1309 patients, 935 (71%) women and 374 (29%) men with a mean age of 81.6 (SD 8.2) years were included. The mean NMS before the fracture was 7.2 (SD 2.2) points, and the mean score three months after the surgery was 5.4 (SD 2.4) points. The mean decrease in NMS scores was 1.8 points (95% CI 1.7 to 1.9), ($p < 0.001$). 341 (26%) patients had the same score at follow-up as before the fracture, 109 (8%) patients improved their score by at least one point, and 859 (66%) patients had a score at least one point lower as before the fracture. The results from the logistic regression analysis showed statistically significant associations between mobility and the factors age, American Society of Anaesthesiologists score (ASA) at baseline, type of operation and pre-fracture mobility. Patients with higher age, higher ASA score at baseline, and lower pre-fracture mobility had lower odds of regaining mobility; OR 0.94 (95% CI 0.93 to 0.96), 0.73 (95% CI 0.57 to 0.93), and 0.73 (95% CI 0.69 to 0.78), respectively. In addition, those who were treated with osteosynthesis had lower odds of regaining mobility compared with those who were treated with arthroplasty 2.02 (95% CI 1.57 to 2.59). Ninety percent (1180/1305) of the patients reported that they had been seen by a physiotherapist after discharge.

Conclusion

The results show a reduction in mobility three months after the hip fracture, compared to status pre-fracture. Although 90% of the patients had been seen by a physiotherapist after discharge, only one-third of the patients had regained their pre-fracture level of mobility three months after treatment. The results indicate a potential for improved rehabilitation interventions in the first three months after a hip fracture. Patients at risk of not regaining their mobility should get a special focus.

P – 18

A REVIEW OF BONE HEALTH INTERVENTIONS IN A RAPID ACCESS FRAILTY SERVICE

Michael Mc Kenna, Rachel Byrne, David Bertilla, Mubashir Hassan, Sabir Rehman, John Doherty, Teresa Donnelly

Department of Geriatrics, Midlands Regional Hospital Tullamore, Arden Road, Tullamore, Co. Offaly, Ireland

Aim

Osteoporosis remains a significant comorbid condition in the older population. The aim of our project was to review bone health interventions in the older population attending a rapid access frailty service.

Methods

We performed a single centre retrospective clinical audit. Data was extracted from paper and electronic clinical patient notes. All patients attending our rapid access frailty unit over the 6 month period from December 2023 to May 2024 were included. Data collected included patient demographics, source and reason for referral, relevant bone health imaging, pharmaceutical and non-pharmaceutical bone health interventions commenced. Pharmaceutical interventions were defined as Vitamin D supplementation, oral or intravenous bisphosphonates, receptor activator of nuclear factor κ-B ligand (RANK-L) inhibitors and parathyroid hormone analogues. Non-pharmaceutical interventions included referral to an 'Ex-Wellness' chronic illness community exercise programme, where patients were educated on dietary and lifestyle modifications. Diagnosis and treatment decision were based on our patient's fracture risk assessment tool (FRAX) and dual energy x-ray absorptiometry (DEXA) scores, as well as the presence of a documented fragility fracture on imaging.

Results

279 patients presented to our service during the 6 month period. 64.16% (n=179) of patients were female. The average age was 80.46 years old. The average Clinic Frailty Score for the population was 4.65. 26.16% (n=73) patients were referred with falls. The primary sources of referrals were from the emergency department (48.74%, n=135) and local general practitioners (41.16%, n=114). 5% (n=14) patients underwent DEXA scanning prior to treatment initiation. 24.37% (n=68) patients were started on pharmaceutical bone health interventions. 35.48% (n=99) were referral to the Ex-Wellness community programme.

Conclusion

Patients referred to the rapid access frailty clinic were mobile and relatively independent, with an average age of 80 and a clinical frailty score of 4. However, one third of this group presented with falls. This highlights that evaluation of bone health remains a key component of a comprehensive geriatric assessment. One quarter of this group required pharmaceutical bone health interventions, based on FRAX or DEXA, while over a third were referred for our community programme. This highlights the growing role of preventive lifestyle-based interventions for osteoporosis, and the improvements in primary care bone health awareness. Ongoing efforts to optimise bone health will continue to reduce our patient's morbidity, and to improve their quality of life.

P – 19

PREDICTORS FOR PHYSICAL FUNCTION THREE MONTHS AFTER HIP FRACTURE SURGERY IN OLDER ADULTS

Sylvia Sunde[1], Anette Hylen Ranhoff[1], Mads Sundet[1], Ulf Sundin[1], Siri Lillegraven[1], Maren Paus[1], Mette Martinsen[1], Karin Hesseberg[1,2]

1 Diakonhjemmet Hospital, Oslo, Norway
2 Oslo Metropolitan University, Oslo, Norway

Aims

Many patients have a substantial reduction in physical function after suffering a hip fracture. This study aimed to identify baseline factors associated with decreased physical function three months after hip fracture surgery in older adults.

Methods

Data was retrieved from a quality database including patients admitted to a general hospital in Oslo, Norway due to a hip fracture between 2014 and 2023. All patients 65 years or older who attended the three-month physiotherapy follow-up were included. Physical function was assessed by the Short Physical Performance Battery (SPPB). A multivariate linear regression analysis was performed with SPPB as outcome variable, and age, sex, Charlson Comorbidity Index (CCI), American Society of Anesthesiologists score (ASA), pre-fracture New Mobility Score (NMS), and osteosynthesis vs arthroplasty as predictor variables.

Results

1661 cases were included in the analyses. The mean age of the patients was 81.8 (SD 8.1) years; 1196 (72%) were female. The mean score on the SPPB 3 months after surgery was 6.3 (SD 3.5) points. 832 (50%) were treated with hemiarthroplasty or total hip arthroplasty, whereas 829 (50%) were treated with osteosynthesis. Multiple regression analysis showed positive associations between pre-fracture NMS and SPPB, β 0.82 (95% CI 0.74 to 0.89). In the same model, we observed negative associations between SPPB and the other explanatory variables, age [β -0.09 (95% CI -0.11 to -0.07)], ASA score [β -0.59 (95% CI -0.88 to -0.30)], and CCI [β -0.21 (95% CI -0.36 to -0.06)]. Furthermore, being treated with osteosynthesis was negatively associated with SPPB, β -0.60 (95% CI -0.89 to -0.31). There was a trend towards worse physical function in men compared to women, β -0.32 (95% CI -0.65 to 0.01).

Conclusion

Patients with higher age, lower pre-fracture physical function measured by NMS, higher ASA score, higher Charlson Comorbidity score, or who are treated with osteosynthesis are at higher risk of worse physical function three months after hip fracture. This frail group should be offered extensive rehabilitation services while hospitalized and in the first months after discharge. The results can help healthcare providers optimize treatment for patients with a higher risk of low physical function following hip fractures.

P – 20

PREDICTIVE FACTORS OF GAIT RECOVERY AFTER HIP FRACTURE: A SCOPING REVIEW.

Cristina González de Villaumbrosia[1], Raquel Barba Martín[1], Teresa Álvarez de Espejo Montiel[1], Patricia Condorhuamán Alvarado[2], Cristina Ojeda Thies[4], Jesús Mora Fernández[5], José Manuel Cancio Trujillo[6], Teresa Pareja Sierra[7], Pilar Sáez López[3]

1 Hospital Rey Juan Carlos, Móstoles, Madrid, Spain
2 Hospital La Paz, Madrid, Spain
3 Hospital Fundación Alcorcón, Madrid, Spain
4 Hospital Doce de Octubre, Madrid, Spain
5 Hospital Clínico San Carlos, Madrid, Spain
6 Badalona Serveis Assistencials, Barcelona, Spain
7 Hospital de Guadalajara, Spain

Aim

This scoping review aimed to identify predictive factors influencing gait recovery post-hip fracture surgery among adults aged 65 and older.

Methods

A systematic search of MEDLINE, Embase, and CINAHL databases was conducted, focusing on studies assessing predictive factors of gait recovery within one month to one year post-surgery. Two independent reviewers carried out study selection, quality assessment, and data extraction using the Quality in Prognosis Studies Tool to gauge evidence levels.

Results

10627 articles initially were identified. After duplicates were removed, 7665 were screened based on title and abstract, 796 based then on full text, and 138 articles were finally included

Numerous intrinsic and extrinsic/modifiable factors were found to influence walking recovery in hip fracture patients. Higher-level evidence supported factors such as age, pre-fracture independence in daily activities, cognitive impairment, delirium, orthogeriatric multidisciplinary co-management, specific surgical interventions, weight-bearing authorization, comorbidities, nutritional status, rehabilitation treatments, and polypharmacy.

Conclusion

The review identified a total of 77 predictive factors. However, only 44% of the identified predictive factors were backed by studies with a low risk of bias, emphasizing the need for future research to focus on factors supported by studies with high risk of bias. Additionally, establishing a universally accepted and operationally defined criterion for gait recovery in hip fracture patients could enhance clinical understanding. This synthesis underscores the complexity of predicting gait recovery post-hip fracture surgery and highlights areas for further investigation and refinement in clinical practice.

References

1. Sheehan KJ, Williamson L, Alexander J et al. Prognostic factors of functional outcome after hip fracture surgery: a systematic review. Age and Ageing 2018; 47: 661–670

2. González de Villaumbrosia C, Sáez López P, Martín de Diego I et al. Predictive Model of Gait Recovery at One Month after Hip Fracture from a National Cohort of 25,607 Patients: The Hip Fracture Prognosis (HF-Prognosis) Tool. IJERPH 2021; 18: 3809

P – 21

DEVELOPING A DEEP LEARNING-BASED ARTIFICIAL INTELLIGENCE MODEL FOR THE CLASSIFICATION OF PROXIMAL FEMUR FRACTURES

Ahmet Hamdi Olçar[1], Özgür Karakoyun[2], Hubeyb Ünal[1]

1 Sancaktepe Training and Research Hospital
2 Doç. Dr. Özgür Karakoyun Clinic

Aims

The aim of this study is to develop a model that can diagnose and classify hip fractures using computer vision and to share this model and training data set with other researchers.

Methods

A total of 676 hip radiographs were used in our study. 300 of these images were classified as normal hip, 110 as femoral neck fracture (31-B), 133 as femur intertrachanteric fracture 31-A1, 68 as femur intertrachanteric fracture 31-A2, and 65 as femur intertrachanteric fracture 31-A3. 70% of the images were divided as training set, 20% as validation set and 10% as test set. 473 images in the training set were increased to 2365 images with data augmentation methods. We use our data to create models for computer vision. We used Ultralytics YOLOv8 modeling.

Results and Conclusions

mAP 50 is a benchmark used to measure the accuracy of object detection models. This metric is the average accuracy score calculated using an IOU threshold of 0.5 .

The IOU value is a value between 0 and 1, and the closer it is to 1, the more accurate the model's predictions are. The mAP50 value of our study was found to be 0.877 at the 99th Epoch, the precision value is 0.891 ,recall value was found to be 0.797. Our model recognizes the proximal femur region on the radiograph and safely classifies this proximal femur fracture.

The model we developed in our study showed high success in detecting and classifying proximal femur fractures. This model and data set can be used as a supporting resource in future research. Artificial intelligence and image processing methods will enable new studies on issues such as reduction in fracture treatment, surgery selection and outcome prediction

References

1. Jiménez-Sánchez , A., Kazi , A., Albarqouni , S. et al. precision proximal femur fracture classification for interactive training oath surgical planning . Int J CARS, 2020: 15, 847–857.

2. Tanzi L, Vezzetti E, Moreno R, Aprato A, Audisio A, Massè A. Hierarchical fracture classification of proximal femur X-Ray images using a multistage Deep Learning approach . Eur J Radiol . 2020 Dec;133:109373 . doi : 10.1016/j.ejrad.2020.109373. Epub 2020 Oct 23. PMID: 33126175.

3. Tanzi L, Audisio A, Cirrincione G, Aprato A, Vezzetti E. Vision Transformer for femur fracture classification. Injury. 2022 Jul;53(7):2625-2634. doi : 10.1016/j.injury. 2022 04.013. Epub 2022 Apr 19. PMID: 35469638.

4. Xu F, Xiong Y, Ye G, Liang Y, Guo W, Deng Q, Wu L, Jia W, Wu D, Chen S, Liang Z, Zeng X. Deep learning-based artificial intelligence model for classification of vertebral compression fractures : A multicenter diagnostic study. Front Endocrinol (Lausanne). 2023 Mar 22;14:1025749.

P – 22

DELIRIUM ASSOCIATION WITH TIME TO THEATRE AND TOTAL ANAESTHETIC TIME IN ELDERLY PATIENTS WITH FRACTURED NECK OF FEMUR

Helia Tahmasvand[1], Hannah Allawi[1], Nikos Reissis[2], George Adamoudis[2], Mohamed H Ahmed[3, 4], Maria Panourgia[3]

1 Medical School, The University of Buckingham, Buckinghamshire UK
2 Department of Orthopaedic and Trauma, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK
3 Department of Geriatric medicine, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK; Honorary Senior Lecturer of the Faculty of Medicine and Health Sciences, University of Buckingham, UK.
4 Department of Medicine and HIV metabolic Clinic, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK

Aim

Delirium is a syndrome characterised by an acute disturbance of consciousness and attention, along with cognitive or perceptual changes, that develops rapidly and fluctuates throughout the day. Often due to an underlying infection or an inflammatory process, it is a serious complication in the post-neck of femur fracture (NOF) elderly population. This study aims to investigate the correlation between delirium, time to surgery, and total time spent under anaesthesia.

Methods

We reviewed 178 patients' records presenting to the emergency department of Milton Keynes University hospital with NOF fracture over a six-month period, from beginning of October 2023 to end of March 2024. Exclusion criteria were: age less than 60 years old and use of spinal anaesthesia.

The final cohort included of 128 patients.

The cut-off point from admission to theatre was 36 hours and the cut-off total anaesthetic time to complete a Dynamic Hip Screw Fixation was 90 minutes, for a Hemiarthroplasty 120 minutes and for an Intramedullary nail fixation 150 minutes. Patients whose anaesthetic time exceeded these times were considered as having "prolonged anaesthesia time".

The medical records were reviewed, and patients documented more than two consecutive times as confused from admission up until 5 days from the operation, were defined as affected from delirium.

Results

Among a cohort of 128 patients, 25 (20%) developed postoperative delirium.

Among the patients with delirium, 10 (40%) had a prolonged anaesthesia time, 6 (24%) had a time from admission to theatre exceeding 36 hours and 5 (20%) of them presented with both prolonged anaesthesia time and time from admission to theatre more than 36 hours.

In total 21 (84%) of the patients that developed delirium had increased anaesthesia time and/or time from admission to theatre.

4 patients (16%) developed delirium not related to the anaesthetic time or the time from admission to theatre.

Conclusion

The results show that in our cohort postoperative delirium is more likely to be associated with a prolonged anaesthesia time and/or time from admission to theatre exceeding 36 hours.

Further research is needed to elicit causes and exact mechanisms associated with delirium in NOF fractured patients.

References

1. Callan KT, Donnelly M, Lung B, McLellan M, DiGiovanni R, McMaster W, Yang S, Stitzlein R. Risk factors for postoperative delirium in orthopaedic hip surgery patients: a database review. BMC Musculoskelet Disord. 2024 Jan 17;25(1):71.

2. Hawley S, Inman D, Gregson CL, Whitehouse M, Johansen A, Judge A. Risk Factors and 120-Day Functional Outcomes of Delirium After Hip Fracture Surgery: A Prospective Cohort Study Using the UK National Hip Fracture Database (NHFD). J Am Med Dir Assoc. 2023 May;24(5):694-701.e7.

3. Tahir M, Malik SS, Ahmed U, Kozdryk J, Naqvi SH, Malik A. Risk factors for onset of delirium after neck of femur fracture surgery: a prospective observational study. SICOT J. 2018;4:27.

P – 23

MEASUREMENT OF FASTING TIME AND PREPARATION FOR SURGERY FOR 67 YEARS AND OLDER WITH HIP FRACTURE

Thuridur Geirsdóttir[1], Arun Kristin Sigurdardottir[4, 2], Lara Borg Asmundsdottir[1, 3]

1 Landspitali University Hospital
2 University of Akureyri
3 University of Iceland
4 Hospital of Akureyri

Introduction

It is estimated that 18% of women and 6% of men will experience a hip fracture in their later years. Hip fractures can cause loss of skills and a change in residency of those involved. Fasting before surgery is a necessary preparation but in recent years research has shown that the fasting time is too long and the waiting time for surgery is getting longer. The number of older people is increasing, including those with hip fractures. It is important to consider nutrition before surgery for older people to prevent complications. The purpose of this research was to analyze how preparation and fasting were implemented with people ≥67years who broke their hips and underwent surgery at Landspítali Hospital in the year 2021. Also, to analyze which interventions are conducted during the waiting time for surgery, compare older and younger patient groups and factors affecting how long participants fasted.

Methodology

Quantitative retrospective data study, where patients were all ≥67 years old, who had a hip fracture and underwent surgery at Landspítali Hospital in the period January 1st until June 30th 2021.

Results

Patients were 144, the average age was 82,1 years (sd ±8.18). The waiting time for surgery was on the average 30 hours (sd ±19.6) and the average fasting time was 13 hours (sd ±5.21). Of the patients 40% had to fast two days in a row due to unforeseen circumstances. Also 40% of the patients developed delirium before surgery, that were more common among ≥80 years (n=83) compared to the group of ≤79 ára (n=61) p=0,038. Assessment of nutritional status was performed on 14,6% of the individuals before surgery but documentation was deficient in many respects. Lineal regression showed that at longer fasting time on fluid had association to more use of nutrition drinks and increased age decreased fasting time (p=0,001).

Conclusions

Fasting time must be shortened before hip surgery. More emphasis needs to be put on shortening the waiting time for surgery to prevent complications for older people with hip fractures. More attention must be paid to nutrition, physical, social and mental activity during the waiting time to increase wellbeing. Nursing documentation needs to be improved.

P – 24

PREDICTORS OF PERITROCHANTERIC FRACTURE OUTCOME OF 1-YEAR MORTALITY IN ELDERLY UNDERGOING VARIOUS TREATMENT

Tzu-Chieh Lin[1],Wen-Miin Liang[2]

1 Taichung Veterans General Hospital, Taiwan
2 Department of Health Services Administration of China Medical University, Taiwan

Aims

To compare the clinical outcomes different types of peritrochantric fracture patients undergoing different types of surgery including internal fixation (IF) and hemiarthroplasty (HA). Relevant predictors were established affecting mortality, readmission rates, and reoperation rates.

Methods

This retrospective study analyzed hip fracture data for individuals aged 60+ from 2000 to 2016, retrieved from Taiwan's National Health Insurance Research Database. Patients with a first hip fracture between 2001 and 2014 were selected. They were divided into internal fixation and hemiarthroplasty groups, matched 1:1 by propensity score. Subjects were followed for 1 year from hospitalization. The Kaplan-Meier method estimated cumulative survival rates, with risk factors explored via log-rank test and Cox model. Competing risk analysis estimated the incidence of first medical and surgical complications.

Results

There were 3,402 pairs of internal fixation and hemiarthroplasty. Mean age: 80.33 years; 32.30% men. 1-year mortality: 14.94% and 16.11%. Men had higher mortality risk (HR: 1.526). Age 85+ increased hazard ratio by 1.54. Surgical complication incidence: 5.68% vs. 10.49%; internal fixation had lower risk (HR: 0.523). Men had higher risk (HR: 1.298). Medical complication rates: 8.10% vs. 10.18%; lower risk with internal fixation (HR: 0.798). Multivariate analysis: mortality hazard ratio with hemiarthroplasty 0.80; surgical complications 0.52, medical complications 0.80.

Conclusions

Between 2001 and 2014 in Taiwan, 1-year mortality and medical complications were higher in trochanteric fracture patients treated with hemiarthroplasty. Postoperative surgical complication incidence was significantly higher with hemiarthroplasty. Men, advanced age, and higher Charlson’s comorbidity index (CCI) were risk factors for overall mortality. Men and higher CCI were risk factors for readmission due to first medical and surgical complications.

References

1. Kuo CC, Tsai CH, Lin TC (2024) Impact of Vitamin D Receptor Genotypes on Taiwan Hallux Valgus. In Vivo. 38(4):1601-1608.

2. Shih LC, Tsai CW, Lin TC, (2022) Association of EZH2 Genotypes with Oral Cancer Risk. In Vivo. 36(6):2669-2677.

3. Tsai JC, Ma JW, Liu SC, Lin TC (2021) Cardiac Arrest Survival Postresuscitation In-Hospital (CASPRI) Score Predicts Neurological Favorable Survival in Emergency Department Cardiac Arrest. J Clin Med. 10(21):5131.

4. Lin CF, Lin SY, Lin TC (2021) Comprehensive Geriatric Assessment and Clinical Outcomes in the Older People at the Emergency Department. Int J Environ Res Public Health. 18(11):6164.

5. Lin JC, Lin TC (2020) Lower rates of mortality, readmission and reoperation in patients receiving acupuncture after hip fracture: a population-based analysis. Acupunct Med. 38(5):352-360.

P – 25

ASSOCIATION OF FRAILTY MEASURES WITH READMISSIONS AND LENGTH OF STAY IN AN ORTHOGERIATRIC HIP FRACTURE PROGRAMME

Kiat Sern Goh, Shiela Panao Arroyo

Changi General Hospital, Singapore

Aims

Fragility hip fracture in older adults is a major geriatric condition of worldwide public health concern, and associated with considerable adverse outcomes such as morbidity, disability and mortality. Frailty is a geriatric syndrome common in older adults with hip fracture, indicating physiological vulnerability to stress and predictive of negative peri-operative outcomes. This study examined the prevalence of frailty and how markers of frailty were associated with 30-day all-cause readmissions and acute hospital length of stay (ALOS) after hip fracture surgery.

Methods

This was a prospective longitudinal study conducted in a tertiary public hospital in Singapore. 278 subjects aged ≥60 with proximal femur fragility fracture who underwent surgical repair were included. They were enrolled in a holistic inter-disciplinary hip fracture orthogeriatric programme and managed in an acute orthogeriatric unit. Three markers of frailty: Hand Grip Strength (HGS), Clinical Frailty Scale (CFS) and Reported Edmonton Frailty Score (REFS) were collected. Individuals who were unable to provide HGS and REFS measurements were excluded. Multivariable cox regression was used to examine the association between frailty measures and 30-day readmission and ALOS.

Results

The mean age of participants was 76.4 ± 7.8 years (66% were female); median ALOS was 10 days (IQR 8-13). 23 individuals were re-admitted within 30 days (8.3%). The prevalence of low HGS (defined as <28kg male;<18kg female) was 74.1%. Mean HGS, mean CFS and mean REFS were 18.5 ± 9.4 ; 3.7 ± 1.5 and 6.5 ± 2.3 respectively. Categorising by CFS, 136 (49.6%) were non frail, 101 (36.9%) were very mildly or mildly frail, and 37 (13.5%) were moderately or severely frail. CFS was associated with higher odds of 30-day readmission with unadjusted and adjusted odds ratios of 1.34 (95%CI 1.05-1.71; p=0.018) and 1.36 (95%CI 1.01-1.83; p=0.042) respectively. Neither HGS nor REFS predicted 30-day readmission rate. ALOS was not associated with any of these frailty measures.

Conclusions

There was a high prevalence of frailty as indicated by low HGS in this study on hip fracture patients. Furthermore, individuals with higher CFS were found to have higher odds of 30-day readmission. Frailty evaluation should be integrated with hip fracture assessment protocols as a standard of care. This can aid prognostication, resource allocation as well as the implementation of tailored interventions which can potentially mitigate outcomes such as early readmissions and prolonged hospitalisation. Further analyses will study the impact of frailty on functional recovery and mortality, and identify which frailty measures correlate best with outcomes.

P – 27

HETEROTOPIC OSSIFICATION AND AVASCULAR NECROSIS AFTER FEMORAL NECK FRACTURE IN CEREBROTENDINOUS XANTHOMATOSIS

Ali Baş, İbrahim Selçuk Tutuş, Olgar Birsel, Sezai Aykın Şimşek

Koc University School of Medicine

Introduction

Cerebrotendinous xanthomatosis (CTX) is an autosomal recessive lipid storage disorder caused by mutations in the CYP27A1 gene. Clinical manifestations include cholestasis, refractory diarrhea, juvenile cataracts, tendon xanthomas, coronary heart disease, neuropsychiatric symptoms, and osteoporosis. Osteoporosis associated with CTX increases the risk of fractures due to low-energy trauma. This case report presents the outcomes of total hip arthroplasty following non-union, heterotopic ossification (HO), and avascular necrosis of the femoral head in a patient with CTX, initially treated with cannulated screws for a right femoral neck fracture.

Materials and Methods

A 39-year-old male presented to our outpatient clinic with right hip pain and leg length discrepancy (LLD). He had sustained a right femoral neck fracture four years prior, treated with cannulated screws at another institution. Post-fracture, he was diagnosed with osteoporosis (BMD T-score: -3.1) and had a vitamin D level of 18.56 ng/ml. CTX was diagnosed following the evaluation of his ataxic gait. He was mobilizing with double crutches, exhibiting an antalgic, ataxic, and Trendelenburg gait. A three-centimeter shortening of the right lower extremity was noted. Hip movements were painful and restricted. Bilateral xanthomatous lesions in the Achilles tendons and cavus deformity in the feet were observed. Imaging revealed avascular necrosis of the right femoral head and HO in the right hip joint.

Results

Surgical intervention included heterotopic tissue excision, removal of cannulated screws, and right total hip arthroplasty. A single dose of 7 Gy radiotherapy was administered on the first postoperative day. At the four-year follow-up, the patient's hip movements were painless, and contractures had regressed. The patient achieved ambulation without limb length discrepancy and no longer required crutches, with no recurrence of HO observed.

Conclusion and Discussion

CTX and secondary osteoporosis lead to fractures following minor trauma in young individuals, as documented in the literature. In this case, non-union of a femoral neck fracture, avascular necrosis, and the coexistence of heterotopic ossification were observed, which have not been previously reported. Although CTX is not traditionally considered a risk factor for HO, prospective studies are warranted. Total hip arthroplasty is an effective treatment for avascular necrosis following femoral neck fractures in CTX patients.

References

1. Koyama S, Sekijima Y, Ogura M, et al. Cerebrotendinous Xanthomatosis: Molecular Pathogenesis, Clinical Spectrum, Diagnosis, and Disease-Modifying Treatments. J Atheroscler Thromb. 2021;28(9):905-925.

2.Berginer VM, Shany S, Alkalay D, et al. Osteoporosis and increased bone fractures in cerebrotendinous xanthomatosis. Metabolism. 1993;42(1):69-74.

3. Zubarioglu T, Kıykım E, Köse E, et al. Clinical, biochemical, and molecular insights into Cerebrotendinous Xanthomatosis: A nationwide study of 100 Turkish individuals. Mol Genet Metab. 2024;142(2):108493.

4. Wejjakul W, Chatmaitri S, Wattanarojanaporn T, Pongkunakorn A, Ittiwut C, Shotelersuk V. Bilateral Femoral Neck Fractures in Cerebrotendinous Xanthomatosis Treated by Hip Arthroplasties: The First Case Report and Literature Review [published correction appears in J Orthop Case Rep. 2018 Jan-Feb;8(1):97. doi: 10.13107/jocr.2250-0685.1018]. J Orthop Case Rep. 2017;7(5):54-58.

P – 28

MID TO LONG TERM OUTCOMES OF INTERTROCHANTERIC FRACTURE MANAGEMENT USING DOUBLE LAG SCREW PROXIMAL FEMORAL NAIL

Salih Candost Yetişmiş[2], Muhammed Yusuf Afacan[1], Hüseyin Botanlıoğlu[1], Ali Şeker[1]

1 Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Orthopaedics and Traumatology, Istanbul, Türkiye
2 Familjelakarna Saltsjöbaden, Stockholm, Sweden

Aims

The treatment options for intertrochanteric femur fractures include plate-screw fixation, intramedullary nailing, or hip prosthesis. This study aims to evaluate the mid to long term outcomes of intertrochanteric femur fractures treated with double lag screw proximal femoral nailing (PFN) in our clinic.

Methods

A retrospective review was conducted on the medical records and radiographs of 39 patients who underwent double lag screw PFN for intertrochanteric femur fractures. Data collected included age, gender, preoperative and postoperative hospital stay, type of trauma, comorbidities, fracture type, nail length, reduction quality, screw position, and subchondral distance. Additionally, complications, contralateral hip collodiaphyseal angle (CDA), postoperative and follow-up CDA, and Barthel Activity Index were analyzed.

Results

The average age of the patients was 71.3 years (range 40-94). The average preoperative waiting period was 8.1 days (range 2-21), and the average follow-up period was 42.3 months (range 8-159). Of the fractures, 20 cases (51.2%) were stable, and 19 cases (48.8%) were unstable. Reduction quality was rated as good in 20 cases (51.2%), acceptable in 11 cases (28.2%), and poor in 8 cases (20.6%). Mechanical complications occurred in 5 cases (12.8%). Five revision surgeries were required: two due to screw cut-out, one due to the Z-effect, one due to screw lateral migration, and one due to unacceptable screw position. All mechanical complications were observed in unstable fractures ($p<0.05$). In the two cases with screw cut-out, the screws were positioned close to the superior section in the AP plane ($p<0.05$). Short nails were used in 31 cases (79.4%), and long nails were used in 8 cases (20.6%). Among the fractures treated with long nails, 7 were unstable ($p<0.01$). The average Barthel Activity Index decreased from 19.3 pre-fracture to 17.6 at 6 months postoperatively ($p<0.01$). The postoperative hip CDA was 133.3°, and the final CDA during follow-up was 130.3°, a significant decrease ($p<0.01$). Among those with a decrease in follow-up CDA, 11 were women and 3 were men ($p<0.05$).

Conclusions

PFN is a minimally invasive and effective method for managing intertrochanteric femur fractures. However, in cases of unstable fractures, achieving reduction can be challenging, and the risk of complications may increase. Ensuring equal or slight valgus CDA to the contralateral hip during reduction might be beneficial. The placement of screws in the superior section should be avoided to reduce the risk of screw cut-out. The higher incidence of CDA decrease in women may be attributed to the prevalence of osteoporosis in this population. Post-fracture, daily living activities may decline significantly.

P – 29

DIFFERENCE IN HEALING TIME BETWEEN ATYPICAL AND SUBTROCHANTERIC FRACTURES

Olgar Birsel[1], Buğra Güllü[1], Ali Baş[1], Caner Günerbüyük[1], Mehmet Ali Deveci[1]

1 Koç University, Department of Orthopaedics and Traumatology, Istanbul, Türkiye
2 Koç University Hospital, Department of Orthopaedics and Traumatology, Istanbul, Türkiye

Introduction

Atypical fractures are injuries that frequently occur in patients undergoing long-term bisphosphonate therapy. These fractures result from low-energy trauma and are particularly observed in the femur bone. Unlike classical osteoporotic fractures, atypical fractures occur in the diaphyseal or subtrochanteric regions of the bone. This study aims to determine whether there are differences in healing time, age, and comorbidities between atypical and conventional subtrochanteric patient groups.

Methodology

This retrospective study included patients with femur fractures treated at Koç University Hospital between 2014 and 2024. The inclusion criteria were: subtrochanteric femur fractures without major trauma. The exclusion criteria consisted of pathological fractures associated with malignancy and patients who were not adequately documented during follow-up. Patients were divided into two groups: atypical and subtrochanteric fractures. The American Society for Bone and Mineral Research (ASBMR) Task Force, Revised Criteria were used to define atypical fractures. Post-operative radiographs were examined to document fracture union. Union was defined as the presence of union in at least two cortices on anteroposterior (AP) and lateral femur radiographs.The data were analyzed using the Mann-Whitney U test. Patients' demographic information, fracture types, treatment durations, comorbidities, bisphosphonate therapy duration, and bisphosphonates used in the treatment were recorded. All data were anonymized to protect patient confidentiality.

Results

Descriptive statistics for the patients included in the study indicated that the atypical fracture group had an average age of 74.78(44-98) years, an average healing time of 59.5(41-101) days, and an average comorbidity count of 1.78. Additionally, the average T-score for the atypical group was -1.8(1,3-(-3,8)), and the average duration of bisphosphonate use was 8(3-20) years. In the subtrochanteric group, the average age was 79.3 years, the average healing time was 56.3(47-69) days, the average comorbidity count was 2.3. The Mann-Whitney U test results showed no statistically significant differences between the groups in terms of healing time ($U = 31.0$, $p = 0.4487$), age ($U = 38.0$, $p = 0.5950$), and comorbidity count ($U = 36.0$, $p = 0.4770$). Additionally, although the atypical group had a longer duration of bisphosphonate use and lower T-scores, these differences were not statistically significant.

Conclusion

These results indicate no significant differences between the atypical and subtrochanteric patient groups regarding healing time, age, and comorbidity count. Furthermore, while differences between the atypical and subtrochanteric patient groups in terms of bisphosphonate use duration and T-scores were observed, they did not reach statistical significance. The findings suggest that further research with larger groups is needed to investigate other potential factors affecting patient outcomes.

P – 31

RUSS-AGE: GERIATRIC STATUS OF OLDER PARTICIPANTS WITH AND WITHOUT OSTEOPOROSIS

Anna Konstantinovna Ilyushchenko[1], Lyubov Viktorovna Matchekhina[1], Eva Maria Shelley[1], Aleksandra Andreevna Melnitskaia[1], Andrey Alexandrovich Tyazhelnikov[2], Irina Vasilievna Alekseenko[3], Olga Nikolaevna Tkacheva[3], Irina Dmitrievna Strazhesko[1]

1 Russian Gerontology Clinical Research Center of Pirogov Russian National Research Medical University of Ministry of Healthcare of the Russian Federation. 129226, Moscow, 1st Leonova str, 16
2 State Budgetary Institution of Healthcare of the City of Moscow "Clinic No. 220". 123022, Moscow, st. Zamorenova, 27
3 Moscow centre for healthcare innovations. 119571, Moscow, 96 Vernadskogo Prospect

Aim

To assess the geriatric status of healthy older participants (65 years and older) with and without osteoporosis (without fractures).

Materials and Methods

The study was carried out Russian Gerontology Clinical Research Center. Inclusion criteria: 1) signed informed consent form; 2) age 65 years or older. Exclusion criteria: 1) presence of an acute illness, exacerbation of a chronic illness, or surgical intervention within the past month; 2) moderate to severe chronic age-associated diseases.

All participants were assessed using geriatric scales. Functional status was analyzed using the Barthel Activities of Daily Living Index and the Short Physical Performance Battery (SPPB). Emotional status was assessed using the Geriatric Depression Scale (HADS) and the Insomnia Severity Index (ISI). Statistical analysis was performed using R version 4.2.2.

The study included 235 participants aged 65 and older who were divided into 2 groups: group 1 - participants had a diagnosis of osteoporosis (without fractures), and group 2 - participants have no osteoporosis.

Results

Age differences were noted between the groups: the median (Q1 - Q3) age in osteoporosis group was higher - 80 (74 - 87) years, in non-osteoporosis group at 76.5 (70.25 - 84) years, p-value 0.023.

Participants in osteoporosis group reported falls in the past year more frequently - 29.69% of cases, compared to 17.75% in non-osteoporosis group, p-value 0.05.

Differences in geriatric status were observed: the Barthel Index (Q1 - Q3) in osteoporosis group was 95 (90 - 100) points, compared to 100 (95 - 100) points in non-osteoporosis group, p-value 0.003. The median (Q1 - Q3) ISI score in osteoporosis group was 12 (7 - 16) points, compared to 9 (4 - 13) points in non-osteoporosis group, p-value 0.02.

The median (Q1 - Q3) HADS depression score in osteoporosis group was 7 (4 - 9) points, compared to 4 (3 - 7) points in non-osteoporosis group, p-value 0.004. The median (Q1 - Q3) SPPB score in osteoporosis group was 8 (7 - 10) points, compared to 10 (8 - 11) points in non-osteoporosis group, p-value 0.003. Differences in handgrip strength were also observed: the median right-hand grip strength (Q1 - Q3) in osteoporosis group was 19.05 (16.45 - 22) kg, compared to 22.7 (19 - 27.15) kg in non-osteoporosis group, p-value 0.002. The left-hand grip strength in osteoporosis group was 18.9 (14.93 - 21.45) kg, compared to 20.95 (17 - 25) kg in non-osteoporosis group, p-value 0.006.

Conclusions

The presence of osteoporosis in older age can worsen the geriatric status and quality of life of patients, even if they don’t have any fractures. The results suggest that patients with osteoporosis at any stage require more help in correction of geriatric syndromes, with careful assessment of their functional and emotional status.

P – 32

COMPLIANCE WITH LOCAL POLICY FOR MENTAL CAPACITY ACT FOR FRAGILITY FRACTURE PATIENTS >75 YEARS OLD

Jenny Lai, Wei Jia Cheeng

Stoke Mandeville Hospital

Aims

This clinical audit explored whether local policy for Mental Capacity Act (MCA) were followed when elderly patients >75 year old with hip fractures requiring surgical intervention were admitted with AMT ≤7 (Abbreviated Mental Test).

Methods

The inclusion criteria was: Aged >75 with hip fractures requiring intervention. Opportunistic sample collection of 30 patients was carried out in the orthopaedic wards at Stoke Mandeville Hospital (SMH) over 6 months.

Results

Of the 30 patients, most were classified as 'Moderately Frail' and 'Vulnerable' as per the Rockwood Frailty Scale. 14 (47%) had an AMT score of ≤7, of those patients, 11 (79%) patients had some form of dementia, confusion/delirium, learning disability and memory impairment, and only 4 (29%) was formally assessed using the 2-stage test of capacity proforma as per local guidelines and all were deemed to have no capacity. Of those patients, only 2/4 (50%) showed clear documentation in patient notes on communication with next of kin (NOK) over decisions.

Conclusions

This suggests that intermittent review and reinforcement of the local policy amongst the multidisciplinary team involved in the care of fragility fracture patients is required to ensure good practice. Other interventions include changes to the hip fracture proforma (used in SMH) to guide doctors when assessing mental capacity in relation to the patient's AMT score, which may be of relevance when making decisions and communicating with NOK.

P – 33

COMPARISON OF FRAILTY SCREENING INSTRUMENTS ON PREDICTIVE OF DEPENDENCY IN THE OLDER INPATIENTS

Fatma Özge Kayhan Koçak[1], Musa Gürsu Şama[2]

1 Geriatric Medicine, Internal Medicine, Tepecik Education and Research Hospital, İzmir, Türkiye
2 Division of Geriatrics, Internal Medicine department, Bakircay University Cigli Training and Research Hospital, İzmir, Türkiye

Aims

Frailty and dependency in older patients can have significant implications for hospitalization. Older adults who are frail and dependent may face increased risks and challenges during hospital stays. The aim of this study is to evaluate the relationship between frailty screening instruments and dependency in Turkish older inpatients.

Method

This cross-sectional study involving 127 subjects aged 65 years or older was conducted at tretiary hospital internal medicine inpatient clinic from September to November 2023. Frailty was defined by the Clinical Frailty Scale (CFS), the Seniors At Risk (ISAR) tool and Triage Risk-Screening Tool (TRST). Dependency was defined by Katz Index of Independence in Activities of Daily Living (ADL), The Lawton Instrumental Activities of Daily Living (IADL).

Results

A total of 127 subjects were examined, of which 72 (56.7%) were in the 75-101-year-old subgroup with a median age of 82.5 years. There were 75 (59.1%) female subjects. According to the ADL and IADL, 44 (34.6%) and 91 (71.7%) were classified as dependency, respectively. Frailty was identified in 54 (42.5%), 108 (85.5%) and 73 (57.5%) patients according to CSF, ISAR and TRST, respectively. The AUC values of the CFS, ISAR and TRST were 0.969 (95%CI 0.942-0.996), 0.899 (95% CI 0.845-0.952) and 0.784 (95%CI 0.705-0.862) for predicting dependency in ADLs. The AUC values of the CFS, ISAR and TRST were 0.879 (95%CI 0.821-0.936), 0.760 (95% CI 0.677-0.843) and 0.737 (95%CI 0.648-0.827) for predicting dependency in IADLs.

Conclusion

Frailty, as measured by the CFS, is associated with an increased risk of adverse health outcomes, including dependency. The Clinical Frailty Scale is a valuable tool for assessing levels of frailty in older adults and, in place of the ISAR and TRST, can help healthcare providers anticipate and manage dependency issues during hospitalisation.

P – 35

ORTHO-G PLUS – A SUSTAINABLE GERIATRIC SERVICE TO ORTHOPAEDIC INPATIENTS WITH NON-HIP FRAGILITY FRACTURES

Rachelle Tan-Patanao, Alexis Ang, Kiat Sern Goh

Changi General Hospital, Singapore

Aims

The orthogeriatric care model is a multidisciplinary team approach in managing hip fragility fractures. Over the past 60 years, it has been shown to improve the outcomes for fragility hip fractures in reducing the length of stay, morbidity, mortality as well as healthcare and social costs. Currently, there is a substantial number of inpatient cases with non-hip fragility fractures but limited data on the impact of orthogeriatric intervention on them.

In 2022, a pilot study was conducted to determine the benefits of orthogeriatric care in patients with non-hip fragility fractures (vertebral and other lower limb fractures). Outcome measures include the length of stay (LOS), 30-day mortality, 30-day readmissions, and geriatric ward takeover rate. The results did not reveal significant outcomes with higher rate of geriatric-ward take-overs when compared to historical standard-care group without dedicated orthogeriatric service (2020). This study aims to uncover potential long-term benefits of Ortho-G Plus service in patients with non-hip fragility fractures as majority of patients are frail with complex medical complications or geriatric syndromes.

Methods

This is a cross-sectional study comparing geriatric outreach in 2022 (pilot) versus 2023. Both groups consisted of orthopaedic inpatients ≥65 years old with non-hip fragility fractures managed with a holistic orthogeriatric protocol.

Results

A total of 110 inpatient admissions in the geriatric outreach program in 2022 and 2023 were included in this study. The results showed that more than 80% of patients were frail with clinical frailty score of above 4. The LOS was 25% shorter in 2023 compared to 2022 (incidence rate ratio 0.75, 95% confidence interval 0.57 to 1.99, P=0.040) with a smaller proportion of geriatric-ward take-over in the 2023 group (chi-squared test P=0.130). There were no significant differences between the two groups concerning age (P=0.148), inpatient mortality (P=1.000), 30-day readmission (P=0.990), and medical complications (P=0.522).

Conclusions

This study revealed that geriatric outreach program in 2023 was superior to the program in 2022 due to the reduction of hospital LOS and geriatric-ward take-over rates possibly explained by proactive participation of the team to achieve integrated and effective care of the patient. Potential full benefits from orthogeriatric care in non-hip fragility fractures may develop if there are continued services and implementation of quality improvement measures like in hip fractures. Further studies on other fragility fractures, their management, and relevant outcomes are needed to be able to formulate a universal guideline or pathway for managing these subsets of patients.

P – 36

ACCELERATING ORTHOPAEDIC ADMISSION TIMES: ENHANCING EFFICIENCY AND PATIENT OUTCOMES

Ashling Whelan[1], Máire Gilmartin[1], Nessa O'Herlihy[2], Aoife Halpin[2], Lorna Flanagan[2], Rosa McNamara[2], Patrick Hillery[2], Conor Hurson[1]

1 Department of Trauma & Orthopaedics, St. Vincent's University Hospital, Dublin, Ireland
2 Department of Emergency Medicine, St. Vincent's University Hospital, Dublin, Ireland

Background

Standard 1 of Ireland's hip fracture care requires admission to an orthopaedic ward within four hours of hospital arrival. This minimizes delirium, allows timely surgery, enhances recovery and survival rates. It also eases ED overcrowding, improves hospital efficiency, and underscores commitment to quality healthcare and cost savings by reducing complications, stays, and readmissions. Achieving this target faces clinical and operational challenges like complex patient triage, diagnostic delays, and bed access necessitating improved resource allocation, streamlined protocols and provider coordination[1,2].

Phase 1: Understanding Our Process

We aimed to:
- Define all steps in the process to admit hip fracture patients and establish metrics for performance.
- Identify and address barriers in the clinical and operational processes to optimize more timely admission.

Methods

- Reviewed current admission processes and created process maps to identify critical steps.
- Observed workflows in real-time and gathered frontline staff insights.
- Engaged with emergency department staff and orthopaedic teams to gather input for improvement strategies.

Results

- A detailed process map highlighted critical time points in the clinical assessment such as triage, x-ray, and orthopaedic referral response times.
- Identified variability in admission times with notable delays from orthopaedic referral to decision to admit, emphasizing the need for expedited orthopaedic response times.
- The median time from orthopaedic referral to decision to admit was 1 hour 38 minutes (Oct 2023).

Recommendations for Phase 2

- Implement clearer communication channels to improve response times from referral to orthopaedics and initial patient assessment.
- Set a target response time of 45 minutes, with a decision to admit within 1.5 hours of referral.
- Adapt to weekly 15-minute huddles for immediate team feedback, problem-solving and collaboration.

Phase 2: Optimizing Our Process and Performance

In this phase we focused on iterative quality improvement to:

- Enhance referral process efficiency.
- Strengthen multidisciplinary team efforts to streamline communication.
- Ensure timely completion of the decision to admit process.

Results

- Median time from orthopaedic referral to admit decision reduced from 1 hr 38 min to 1 hr 11 min in Dec 2023, facilitating faster admission.
- Delayed blood results were observed to be delayed, prompting a timeline review. We found 61% of patients had results pending at admission decision. This prompted implementation of a Hip Fracture Blood Test Profile at admission to streamline process.

Conclusion

Our phased approach improved orthopaedic referral response times and addressed key diagnostic barriers to timely admission. Continuous collaboration will maintain these gains, aligning with national guidelines and optimizing patient care pathways. This journey highlights our dedication to orthopaedic care excellence and sustainable adherence to Irish Hip Fracture Standards.

References

1. National Office of Clinical Audit, (2023) Irish Hip Fracture Database National Report 2022. Dublin: National Office of Clinical Audit.
2. Murphy EP, Murphy RP, McKenna D, Miller P, Doyle R, Hurson C. Improved adherence to hip fracture standards reduces mortality after hip fractures. Surgeon. 2024 Feb;22(1):25-30.

P – 37

HIP FRACTURES IN OLDER ADULTS: OPERATIVE VERSUS CONSERVATIVE MANAGEMENT

Malarkodi Suppamutharwyam, Reena Nadarajah, Tunku Muzafar Shah Tunku Jaafar Laksmana

Selayang General Hospital, Malaysia

Aim

This study compares the clinical features and factors influencing treatment decisions among patients with fragility hip fractures.

Methods

A retrospective analysis was conducted on 312 patients aged 60 years and above who were admitted with fragility hip fractures at a tertiary public hospital in Malaysia between January 1, 2022, and December 31, 2023.

Results

Among the 312 patients, 71% underwent operative intervention, with a mean age of 77. Approximately 50% of patients in the conservative group required assistance with mobility, compared to 40% in the operative group, with a p-value of 0.007. This suggests that pre-fracture mobility status influences the decision-making process, particularly within the orthopaedic team [1].

Patients in conservative group appeared to be frailer than the operative cohort, with 18% having a clinical frailty scale of 6 and above, compared to only 7% from the operative cohort. This indicates that clinicians tend to rely on the frailty scale to assess suitability for operative intervention. Almost 41% of patients treated conservatively had American Society of Anaesthesiologists (ASA) status of 3 or 4 indicating severe systemic diseases with p-value of 0.004. But 59% of patients with ASA status of 1 and 2, with normal health or mild systemic disease, did not receive any surgical intervention. This shows discrepancy in surgical selection criteria among the involved specialty such as orthopaedics, geriatrics and anaesthesiology.

Among the patients who underwent operative intervention, only 5% received surgery within 48 hours. The primary cause of delay in operative intervention was the unavailability of the operating theatre (75%), followed by the need for medical stabilization (16%). Only 37% of patients were mobilized by the physiotherapy team on the day of the operation, while 63% experienced delayed mobilization.

Patients who underwent operative intervention had a longer mean length of stay (LOS) of 13.8 days in comparison to the conservative group, which is 8.5 days. The longer LOS in the operative cohort can be attributed by the delayed surgery and postoperative mobilization.

67% of patients who underwent conservative management were discharged to their homes, while 18% were relocated to residential care facilities. Additionally, 5% were transferred to acute care units, 5% were moved to rehabilitation units, and 5% succumbed during hospitalization, with a statistically significant p-value of 0.001.

Conclusion

Addressing resource allocation issues, including Operating Theatre (OT) and surgeon availability, is crucial to avoid unwarranted delays in surgical procedures. Standardizing surgical selection criteria across the relevant specialties is essential to ensure the delivery of optimal care to patients.

References

1. Stubbs, Thomas A. et al. Using pre-fracture mobility to augment prediction of post-operative outcomes in hip fracture. European Geriatric Medicine 14 (2023): 285-293.

P – 38

INCREASING THE UPTAKE OF IV ZOLEDRONIC ACID IN PATIENTS OVER 65 YEARS OF AGE FOLLOWING A HIP FRACTURE

Gokulan Suthermaraj, Tefera Zerihu[1], Dawn Coventry, Lesley Morrow, Aysha Anjum

Royal Infirmary Edinburgh - NHS Lothian

Aims

The aim of this project is to increase compliance with Standard 11 of the *Scottish Standards of Care for Hip Fracture Patients*. Standard 11 outlines that every patient with a hip fracture should be given loading dose of Vitamin D within 24 hours of administration. In addition, within 30 days, they should receive Zoledronic acid treatment and be referred to the local bone health pathway. This project focussed on improving the secondary prevention care of osteoporosis provided by the orthogeriatric service at the Royal Infirmary of Edinburgh.

Methods

Between January 2023 and September 2023, data was collected for all patients over 65 years of age with a hip fracture that were admitted to one of three orthopaedic wards at the Royal Infirmary of Edinburgh. Data was collected on whether the patient was loaded on vitamin D, if they received IV Zoldedronic acid, if reasons were documented why a patient was not eligible for IV Zoledronic acid and if there was a bone health follow up plan outlined in the hospital discharge letter. Multiple change ideas and interventions were implemented to address these factors to improve uptake. An IV Zoledronic safety pre-administration checklist was created, IV Zoledronic acid patient information leaflets were printed from the Royal Osteoporosis Society, teaching sessions were provided to junior doctors in orthopaedics, a teaching session was provided by a qualified dentist to speak on risks of osteonecrosis of the jaw and there was a push to start administering vitamin D loading on the first day of admission so as to not delay IV Zoledronic acid administration before discharge.

Results

Data showed that the main reasons for non-administration of IV Zoledronic acid include reduced creatinine clearance, dental health concerns, already on bone health treatment, patient declined treatment or were unable to consent, patient was discharged before administration, approaching end of life, not assessed by the orthogeriatric service or no documented reason. Over time data has shown a positive improvement in the percentage of hip fracture patients receiving IV Zoledronic acid from 16% in January 2023 to 33% in September 2023.

Conclusion

Ongoing work is being carried out by the department to further improve the uptake of IV Zoledronic acid to patients over 65 following a hip fracture. Following future changes, this work will be expanded to the other two orthopaedic wards and then subsequently to nearby downstream orthogeriatric rehab wards and hospitals.

References

The Scottish Hip Fracture Audit. (2023). Scottish standards of care for hip fracture patients. [online] Available at: https://www.shfa.scot.nhs.uk/Quality-Improvement/index.html [Accessed Jun. 2024].

P – 39

INPATIENT FALLS RESULTING IN SERIOUS INCIDENTS (SIS): A TRUST-WIDE REVIEW

Natalie Simone Pettit, Zak Ahmad, Zeinab Majid, Huma Naqvi

Sandwell and West Birmingham Hospitals

Background

Inpatient falls are the most frequently reported safety incident in NHS hospitals. 30–50% of falls result in physical injury [1]. The human cost of falling is physical, psychological, and financial. Multifactorial assessments should be performed to identify an individual's risk of falling in hospital as per NICE guidance.

Aims

To audit the number of inpatient falls causing injury and/or death in our Trust, reviewing compliance and quality of multifactorial assessments as per NICE guidance ([65 or those with co-morbidities which increase falls risk).

Methods

A retrospective study of inpatient falls leading to serious incidents in the Trust between January 2019 and September 2021, based on the National Audit for Inpatient Falls (NAIF) proforma.

Results

42 patients were included in the data analysis. All sustained injury. Most common were wrist fractures and soft tissue injuries, with 1 death reported. The average age of the patients was 76.4. 60% of patients had a cognition care plan, 70% had a mobility care plan and 32.5% of patients had a continence plan. Delays were seen in 44% of cases and average time for assessment post-fall was 211 min. 3-month mortality following a fall was 64% and 1-year mortality was 86%.

Key conclusions

Results identified that improvement is required in all domains of assessment to ensure 100% compliance in preventing inpatient falls. Our findings highlighted the need for a more robust falls pathway with re-development and education of assessment tools within our Trust's electronic system, which we are implementing as a result of our review.

Reference

1. Falls in Older people, assessing risk and prevention NICE Clinical Guideline [CG161] June 2013.

P – 40

BIOELECTRICAL IMPEDANCE VECTOR ANALYSIS BASED ON NUTRITIONAL RISK IN ELDERLY HIP FRACTURE PATIENTS

Seung-Kyu Lim[2], Yoonhee Kim[1], Jae-Young Lim[1]

1 Seoul National University Bundang Hospital
2 Soonchunhyang University Cheonan Hospital

Aims

Hip fracture patients commonly experience nutritional problems, which not only lead to poor postoperative outcomes but also hinder rehabilitation treatment. Bioelectrical impedance vector analysis (BIVA) has previously been shown to indicate relative nutritional status in patients. The aim of this study was to investigate the application of BIVA in elderly hip fracture patients and compare it with malnutrition risk.

Methods

This cross-sectional study included 103 hip fracture surgery patients aged 65 and older (n = 34 men; n = 79 women; mean age 81.7 ± 6.2 years; mean body mass index 22.1 ± 3.7 kg/m²). Bioelectrical impedance assessments were conducted, and resistance (R) and reactance (Xc) data were analyzed based on height and plotted on RXc graphs. The data were compared with reference population groups, including age- and BMI-matched South Korean elderly population. Patients were categorized by malnutrition risk using the Geriatric Nutritional Risk Index (GNRI). An independent t-test and Pearson correlation test were used for normally distributed data, and a Mann-Whitney U and Spearman correlation test for nonparametric data were used. For BIVA bivariate group vector comparisons, the Hotelling's T^2 test and Mahalanobis distances (D) between groups were analyzed. The results include T^2, F, P, and D values, with a P value <0.05 considered statistically significant.

Results

The BIVA confidence ellipse indicated that the men and women were significantly different from the reference population groups ($P < 0.001$). Based on the GNRI, a significant difference was found between the no-risk group and the major-risk group in men. In women, significant differences were observed between the no-risk and moderate-risk groups, as well as between the low-risk and moderate/major-risk groups. The majority of hip fracture patients, both men and women, were positioned outside the 95% tolerance ellipse, particularly in the right lower and upper quadrants, indicating low body cell mass or cachexia. Patients within the 75% tolerance ellipse or any tolerance ellipse were generally in the relatively lower nutritional risk groups. In contrast, more severe nutritional risk groups were outside the 95% tolerance ellipse, especially in the right lower quadrant. According to the severity of malnutrition, R/H was higher and Xc/H was lower.

Conclusions

The significant reduction in the Xc component and the BIVA pattern outside the upper or lower right quadrants indicates lower muscle composition or a cachexic condition in older hip fracture patients, suggesting a frail and malnourished state. We also identified a trend of increasing R/H and decreasing Xc/H based on nutritional risk with the BIVA distribution pattern. BIVA is an effective method for screening and early identification of nutritional status in hip fracture patients, but it requires validation in larger cohorts. Future studies are necessary to improve and optimize the care of hip fracture patients.

P – 41

HIP AND KNEE ARTHROPLASTY IN SOLID ORGAN TRANSPLANT PATIENTS: RESULTS FROM A TURKISH GOVERNMENT-BASED HEALTH REGISTRY

Mehmet Kursat Yilmaz[1], Omer Serdar Hakyemez[1], Murat Birinci[1], İzzet Bingöl[2], Naim Ata[3], Mahir Ülgü[3], Suayip Birinci[3], İbrahim Azboy[1], Fahri Erdogan[4]

1 Medipol University
2 Ankara Onkoloji Eğitim ve Araştırma Hastanesi
3 Sağlık Bakanlığı
4 Nisantası Orthopaedics Center

Background

Solid organ transplantation (SOT) recipients often face musculoskeletal complications, leading to joint arthroplasty as a treatment option. Complication and mortality rates in SOT patients are not clear.

Methods

This large cohort study analyzed the outcomes of total knee arthroplasty (TKA), total hip arthroplasty (THA), and hemiarthroplasty (HA) in SOT patients using data from the Turkish Ministry of Health. Propensity score matching ensured a comparable control group. Primary endpoints consisted of any medical and surgical complications in 90 days and mortality (in-hospital, 1 month, 3 months, 1 year, and overall).

Results

The most common organ transplant was kidney (n=666, 81.5%), followed by liver (n=101, 12.4%). The total revision rate was 4.5% for the SOT group and 3.9% for the control group with no statistically significant difference (P=0.472). SOT was associated with higher rates of some medical complications compared to the control group, including chronic renal failure, pneumonia, venous thromboembolism, electrolyte and acid-base imbalance, gastrointestinal bleeding, urinary system complications, and transfusion (P<0.05). The rate of mechanical complications was 2.57% and that of prosthetic joint infection (PJI) was 2.57%. Mechanical complications were lower among SOT patients compared to the control group (3.7%), but PJI rates were higher (1.4%) (P=0.035). History of fracture (HR: 4.82, 95% CI: 1.66-13.97, P=0.004), chronic obstructive pulmonary disease (HR: 1.7, 95% CI: 1.17-2.46, P=0.005), and age (HR: 1.034, 95% CI: 1.01-1.05, P<0.001) were identified as predictive factors for 90-day mortality in SOT patients. Patients who underwent HA had significantly higher mortality compared to TKA and THA (17.5%, 1.1%, and 1.7%, respectively; P<0.001).

Conclusion

The risk of complications and mortality is high among SOT patients undergoing joint arthroplasty, particularly in cases of fractures. Team management, meticulous perioperative optimization of modifiable comorbidities, blood preservation strategies, and close monitoring after surgery may help reduce the risk of complications and mortality.

P – 42

FEMORAL NERVE PALSY DUE TO MIGRATION OF LESSER TROCHANTER FRAGMENT MASKED BY DELIRIUM, ANXIETY AND POST-FALL SYNDROME

Adrian Stützle[1], Georg Antonio Bernecker[1], Massimo Ruffo[2], Christoph Rouden[3],Christian Bernhard Frank[1]

1 Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland
2 Center for Rehabilitation and Geriatrics, Cantonal Hospital Baselland, Switzerland
3 Department for Vascular Surgery, Cantonal Hospital Baselland, Switzerland

Introduction

Geriatric comorbidities can be a challenge in the post-operative period. We present a patient with major complication after nailing for pertrochanteric fracture, who developed partial femoral nerve palsy due to a dislocated lesser trochanter fragment. Lesser trochanter dislocation and pain are frequent, bleeding complications are a rare but known complication, palsy due to nerve entrapment is seldom. However, detecting partial femoral nerve palsy masked by geriatric symptoms like delirium, weakness, depression and post-fall syndrome can be extremely challenging.

Method

An 86-year-old male with complex pertrochanteric fracture and early dislocation of the lesser trochanter developed pain, anxiety and weakness. After delirium with better return of cognitive function, the anxiety, depression and post-fall syndrome with inconstant pain got predominant. Alongside general weakness, loss of strength at the operated leg became noticeable, explaining his fear of falling. Neurologists confirmed partial femoral nerve palsy. Plain radiographs showed good reduction without secondary dislocation of the main fragments, no implant related problems but migration of the lesser trochanter. CT-Scan and sonography showed the lesser trochanter fragment compromising the femoral nerve, situated in the bifurcation of the femoral artery. Blood flow was normal. During operation, the nerve was elongated but recovered after partial removal of the large fragment of the lesser trochanter.

Results

Postoperatively, the clinical situation improved promptly. The patient had less pain, better motor function and regained power gradually. Neurological investigations showed nerve alteration with good recovery potential.

Conclusion

Treatment of unclear symptoms in post-operative orthogeriatric patients with trauma can be challenging. Typical geriatric co-morbidities can mask complications, especially when occurring infrequently and resembling common postoperative conditions. This patient had suffered from both surgical and geriatric symptoms such as delirium, pain and weakness which are often interconnected. Lesser trochanter dislocation is common and normally not addressed with surgery. It is also often associated with increased pain and longer recovery time. Consequently, problems due to the dislocated lesser trochanter fragment may be neglected. Thus, when in doubt, an early CT scan is suggested to detect unusual migration and compression to the vascular nerve bundle.

References

1. Sun Q, et al. The influence of position of the displaced lesser trochanter on clinical outcome of unstable trochanteric femur fractures in the elderly. BioMed Res Int., 2018; 2018: 1–6.
2. X. Liu, et. al., Does integrity of the lesser trochanter infuence the surgical outcome of intertrochanteric fracture in elderly patients?, BMC Musculoskeletal Disorders, vol. 16, no. 1, 2015.
3. J. W. Patti, et. al. Impingement of lesser trochanter on ischium as a potential cause for hip pain, Skeletal Radiology, vol. 37, no. 10, pp. 939– 941, 2008
4. K. A. Johnson, et. al. Impingement of the lesser trochanter on the ischial ramus afer total hip arthroplasty. Report of three cases, The Journal of Bone & Joint Surgery, vol. 59, no. 2, pp. 268-269, 1977.
5. Barquet A, et al. Proximal femoral fractures and vascular injuries in adults: Incidence, aetiology and outcomes. Injury (2015).
6. Kao JT, et al. Pudendal nerve palsy after femoral intramedullary nailing. J Orthop Trauma. 1993;7(1):58-63.
7. Chloros, G. D., et al. Iatrogenic sciatic nerve injury secondary to clamp placement around the femoral neck during proximal femoral fracture intramedullary nailing. Trauma Case Reports, 35, 100532.
8. Rommelmann, P., Kompression des Nervus femoralis durch ein sekundär disloziertes Trochanter-minor-Fragment bei pertrochantärer Femurfraktur. Unfallchirurg 110, 645–647 (2007).

P – 43

DOES DIABETES MELLITUS TYPE 2 AFFECT BONE MINERAL DENSITY IN ELDERLY HIP FRACTURED PATIENTS

Ioannis Papaioannou[1], Georgia Pantazidou[2], Thomas Repantis[1], Andreas Baikousis[1]

1 Orthopaedic Department, General Hospital of Patras, Greece
2 University of Patras, Public Health Postgraduate Program, Greece

Objectives

The purpose of this study is to evaluate the differences of BMD measurements between hip fractured elderly patients with and without diabetes mellitus type 2 (T2DM).

Material and Methods

We retrospectively studied 114 elderly patients (>65years old) with osteoporotic hip fractures, which were treated between January 2021 and January 2022. The non diabetes group was consisted of 49 patients, while the diabetes group includes 65 patients. 11 patients were newly diagnosed with impaired hemoglobin A1C (HbA1C) and switched to the diabetic group. 4 out of 11 patients were diagnosed with T2DM and 7/11 had prediabetes. We measured the values of bone mineral density (BMD) with Dual energy X-ray absorptiometry (DEXA) and/or Quantitative ultrasound (QUS) of calcaneus.

Results

Normal BMD values weren't found in any patient of both groups. In non-diabetic group 73,5 % (36/49) of patients were found with T- score lower than -2,5 and osteoporosis diagnosis was settled. In contrary osteoporosis in diabetic group was diagnosed in 66,2% (43/65). Osteopenia (T-score between -1 and -2,5 was found in 26,5% (13/49) of non-diabetic patients and in 33,8% (22/65) of diabetic patients. Despite the differences of BMD between the two groups the statistical analysis (SPSS v 28.0) based on chi-square and $\chi 2$ test didn't reveal statistical significance (p=0,402).

Conclusions

Our study, despite the small number of patients confirmed the fact that patients with T2DM are associated with higher bone mineral density, although they are associated with increased fracture risk. This paradox, which is strongly supported by the current literature should be taken into consideration by physicians for fracture prevention. Trabecular bone score (TBS) and revised FRAX-score are paramount of importance to achieve this goal. Bone fragility should be recognized as a new complication of T2DM, especially in elderly patients. The elderly patients are even more vulnerable to T2DM-induced bone fragility due to additional factors, such as senile osteoporosis, severe VD deficiency, comorbidities, insulin usage, diabetes-related complications and especially diabetic neuropathy and retinopathy, predisposing to falls. Undiagnosed T2DM should be investigated to eliminate an additional risk factor for poor bone quality and all the well-known complications of T2DM.

References

1. Napoli N, Chandran M, Pierroz DD, Abrahamsen B, Schwartz AV, Ferrari SL: Mechanisms of diabetes mellitus-induced bone fragility. Nat Rev Endocrinol. 2017, 13:208-19. 10.1038/nrendo.2016.153

2. Hygum K, Starup-Linde J, Harsløf T, Vestergaard P, Langdahl BL: Mechanisms in endocrinology: diabetes mellitus, a state of low bone turnover - a systematic review and meta-analysis. Eur J Endocrinol. 2017, 176:R137-5. 10.1530/EJE-16-0652

3. Shu A, Yin MT, Stein E, Cremers S, Dworakowski E, Ives R, Rubin MR: Bone structure and turnover in type 2 diabetes mellitus. Osteoporos Int. 2012, 23:635-41. 10.1007/s00198-011-1595-0

4. Samelson EJ, Demissie S, Cupples LA, et al.: Diabetes and deficits in cortical bone density, microarchitecture, and bone size: Framingham HR-pQCT study. J Bone Miner Res. 2018, 33:54-62. 10.1002/jbmr.3240

5. Moseley KF: Type 2 diabetes and bone fractures. Curr Opin Endocrinol Diabetes Obes. 2012, 19:128-35. 10.1097/MED.0b013e328350a6e1

6. Yamamoto M, Yamaguchi T, Yamauchi M, Kaji H, Sugimoto T: Bone mineral density is not sensitive enough to assess the risk of vertebral fractures in type 2 diabetic women. Calcif Tissue Int. 2007, 80:353-8. 10.1007/s00223-007-9003-7

7. Jiang N, Xia W: Assessment of bone quality in patients with diabetes mellitus. Osteoporos Int. 2018, 29:1721-36. 10.1007/s00198-018-4532-7

P – 46

TACKLING HIP FRACTURES AND POLYPHARMACY: INNOVATIVE STRATEGIES FOR BETTER OUTCOMES!

Sherif Zidan[2], Bekim Haxhiaj[2], Backer Afnan[2], Mustafa Mouhsen[1], Abdelaziz Elsalmawy[1]

1 Southend University Hospital
2 North Middlesex University Hospital

Introduction

Hip fractures in older adults are frequently caused by minor trauma, with polypharmacy recognized as a significant risk factor. This study aimed to investigate the frequency of polypharmacy in patients with fragility fractures. The Geriatric 5Ms framework is a valuable tool that offers a person-centered approach to addressing polypharmacy and optimizing medications, including deprescribing when appropriate.

Materials and Methods

We retrospectively collected clinical data from patients aged ≥75 years who underwent hip surgery at our hospitals between March 2022 and February 2023. The association between the number of prescribed drugs and the prevalence of hip fractures was examined.

Results

Out of 330 patients reviewed, 72% were taking six or more prescription drugs. Blood thinners, diuretics, and non-steroidal anti-inflammatory drugs were frequently prescribed. Multivariable analysis revealed a significant association between polypharmacy and hip fractures. Specifically, blood thinners and antihypertensive medications were significantly associated with hip fractures.

Conclusions

Interprofessional team members should consider the patient's holistic picture, co-morbid conditions, and goals, rather than solely relying on disease management guidelines, to focus on overall health improvement. Deprescribing is an important and challenging field that requires balancing potential risks, side effects, costs, and burdens on patients and caregivers with the intended benefits. There is no one-size-fits-all approach.

P – 47

DEVELOPING AND IMPLEMENTING A FRAGILITY FRACTURE CARE PATHWAY: AN ADVANCED NURSE PRACTITIONER'S APPROACH

Leena Rodrigues

St Vincent's University Hospital, Dublin, Ireland

Background

Fragility fractures from low-trauma falls pose significant health concerns, particularly among older adults. A high-quality fracture liaison service (FLS) is essential for effective management, morbidity reduction, quality of life improvement, and prevention of subsequent fractures[1]. In a large teaching hospital in Dublin, Ireland, only 19% of the fragility fractures were identified and provided with a DXA scan[2]. The FLS nurse did not follow up with these patients to ensure treatment commencement and adherence to the treatment plan.

Aim

To develop and implement a standardised fragility fracture care pathway to enhance bone protection and prevent subsequent fractures.

Methods

A thorough literature review was conducted to identify best practices and guidelines for preventing subsequent fractures. The candidate advanced nurse practitioner integrated the vital elements from the International Osteoporosis Foundation[3] and Royal Osteoporosis Society[4] guidelines into the care pathway. The pathway included case finding, bone health, fracture risk and fall risk assessment, appropriate investigations, timely diagnosis, treatment, patient education, and follow-up care. The candidate used transformational leadership to develop and implement the pathway. A local implementation group was formed to discuss the issues and progress of the service.

Results

Collaboration with key stakeholders helped streamline patient identification through theatre, fracture clinic, trauma assessment clinic, orthopaedic referral and daily medical handover lists. Medical teams also referred a small number of patients. Developing an evidence-based advanced health assessment proforma incorporating bone health, fracture risk and fall risk assessment tools facilitated identifying and assessing fragility fractures within 90 days[5]. The candidate triaged the patients into low, intermediate, and high-risk groups. Patients with a previous DXA scan were referred to the same centre to compare scans. The triaging criterion and a DXA waiting list validation process reduced the waiting time from 18 to 9 months. The pathway facilitated better coordination of care across different healthcare facilities. While the candidate awaited authorisation to prescribe treatment, high-risk patients who met the criteria per the U.K. national osteoporosis guidelines were referred to their general practitioner or primary team to commence treatment. All patients received an initial fall risk assessment screening and referral to balance and strengthening exercise programmes when appropriate. Medication adherence is ensured through timely follow-up at four months and one year.

Conclusion

Developing and implementing a fragility fracture care pathway by an ANP is a feasible and effective strategy to enhance the management of fragility fractures. This approach improves patient care and promotes a collaborative, multidisciplinary model that can be adapted and implemented in various healthcare environments.

References

1. Dockery, F., Glynn, A., Franks, K., Carey, J.J., et al., (2022) Fracture liaison services in Ireland- how do we compare to international standards?, Osteoporosis International, 33(5), pp. 1089-1096.

2. The National Clinical Programme for Trauma and Orthopaedic Surgery (2022) Irish fracture liaison service database first report, Dublin, Ireland.

3. International Osteoporosis Foundation (2020) Capture the Fracture: Best Practice Framework. Available from: https://www.osteoporosis.foundation/educational-hub/capture-the-fracture/best-practice-framework

4. Royal Osteoporosis Society (2019) Effective Secondary Prevention of Fragility Fractures: Clinical Standards for Fracture Liaison Services.

5. LeBoff, M.S., Greenspan, S.L., Insogna, K.L., et al., (2022) The clinician's guide to prevention and treatment of osteoporosis, Osteoporosis International, 33 (10), pp. 2049-2102.

6. Javaid, M.K., Sami, A., Lems, W. et al. (2020) A patient-level key performance indicator set to measure the effectiveness of fracture liaison services and guide quality improvement: a position paper of the IOF Capture the Fracture Working Group, National Osteoporosis Foundation and Fragility Fracture Network, Osteoporosis International, 31, pp. 1193–1204.

7. National Osteoporosis Guidelines Group (NOGG)- U.K. (2021) Clinical Guideline for the Prevention and Treatment of Osteoporosis. Available at: www. nogg.org.uk.

P – 48

CAN PROMPTS AFFECT THE READABILITY AND COMPREHENSIBILITY OF MEDICAL INFORMATION ABOUT FRAGILITY FRACTURE BY CHATGPT?

Hakan Akkan[1], Gülce Kallem Seyyar[2]

1 Kütahya Health Sciences University, Tavsanli Vocational School of Health Services, Department of Therapy and Rehabilitation, Tavsanli, Kütahya, Türkiye
2 Kütahya Health Sciences University, Faculty of Health Sciences, Department of Occupational Therapy, Kutahya, Türkiye

Aims

The development of sophisticated, large language models has ushered in a new era of knowledge acquisition. Tools such as ChatGPT can appeal to individuals from diverse backgrounds and help patients informed decisions about their treatment. Consequently, it is crucial that this information is clear and easy to understand for patients who are unfamiliar with medical terms. Prompting is crucial for enhancing language model effectiveness by connecting user intent with model comprehension. The aim of this study was to investigate whether writing prompts can affect the readability and comprehensibility of ChatGPT responses in the fragility fracture domain.

Methods

The 32 most frequently searched keywords were determined using Google Trends with the terms "fragility fracture" and "osteoporotic fracture". A selected set of 24 keywords was entered in sequence into the ChatGPT chat interface. We used two types of prompts: one written in plain language that included the keywords, and another that consisted of the keywords only. The AI-generated responses' readability and comprehensibility were assessed using the Flesch-Kincaid Reading Ease (FKRE) and Flesch-Kincaid Grade Level (FKGL), respectively. The scores of the responses were compared using the Mann-Whitney U test.

Results

The median FKRE scores were 34.35 for plain language prompts and 23.60 for the keywords-only prompts. For the FKGL scores, the median was 12.05 for plain language prompts and 14.50 for the keywords-only prompts. There were statistically significant differences between the plain language prompts and keywords-only prompts for both FKGL and FKRE scores ($p<0.05$).

Conclusions

The answers received after entering the plain language prompts were more readable and understandable than those obtained from the keywords-only prompts. Although ChatGPT provides accessible information for patients regarding fragility and osteoporotic fracture, its current readability and comprehensibility are affected by prompting.

P – 50

FRAILTY AND DEMENTIA LIMIT REHABILITATION OUTCOMES AFTER HIP FRACTURE SURGERY: INSIGHTS FROM AN ORTHOGERIATRICS UNIT

Paolo Mazzola[1,5], Giulia Caggiu[1,2], Matteo Monzio Compagnoni[2], Michela Passamonte[3], Patrizia Floris[3], Martina Manna[1], Francesco De Filippi[4]

1 University of Milano-Bicocca, School of Medicine and Surgery, Monza (MB), Italy
2 University of Milano-Bicocca, Department of Biostatistics and Quantitative Methods, Milano (MI), Italy
3 ASST Valtellina e Alto Lario, Morbegno Hospital, Morbegno (SO), Italy
4 Società Italiana di Geriatria Ospedale e Territorio, Segretario Sezione Lombardia, Milano (MI), Italy
5 Fondazione IRCCS San Gerardo dei Tintori, Acute Geriatrics Unit, Monza (MB), Italy

Aims

Frailty is defined as a syndrome causing increased vulnerability to stressors, which results from and age-associated decline of function and reserve in various physiologic systems. When older adults experience a hospitalization for hip fracture (HF), literature suggests that frailty and pre-existing cognitive impairment (i.e. dementia) have a negative impact on health and rehabilitation outcomes. However, the presence of these two conditions is often used as a justification for postponing surgery. We aim to assess the influence of frailty and dementia on rehabilitation outcomes in a cohort admitted to an Italian orthogeriatrics unit.

Methods

We considered all individuals aged ≥70 years who were admitted to the Orthogeriatrics Unit at Sondrio Hospital (Italy) between 2011 and 2019, with a diagnosis of HF to be treated surgically. Each patient underwent a comprehensive assessment on admission and during the hospital stay, including demographics, medical history and comorbidities, medications, functional and cognitive statuses. Frailty was described by calculating a frailty index (FI) with 16 variables of interest: FI=number of deficits/16. The study population was divided in three groups according to FI scores: non-frail (FI<0.15, reference group), mildly frail (0.15<FI<0.34) and moderately-to-severely frail (FI>0.34). The main outcome was the Rehabilitation Efficiency Index (REI), calculated as absolute functional gain in the Barthel Index / length of stay (days). A score of REI≥0.5 was considered as rehabilitation success.

Results

Among 818 included patients (mean age 85.6 years), more than 4:1 were females. According to the comprehensive geriatric assessment, 21.6% of the cohort had a diagnosis of dementia. Seventy percent of the study population obtained rehabilitation success. We performed multivariable logistic regression analyses to explore the variables potentially related to REI≥0.5, and we identified independent predictors of rehabilitation success: advanced age (≥90 years, OR 0.37, 95% CI: 0.21-0.64), dementia (OR 0.14, 95% CI: 0.10-0.21), and frailty (both mild and moderate-to-severe). Interestingly, we found that a frail phenotype decreasingly impacts rehabilitation success as age increases, i.e. moderate-to-severe frailty does not significantly limit obtaining a positive outcome in those aged ≥90 compared to a higher impact of frailty in younger age groups.

Conclusions

Instead of being delayed, subjects recognized as frail and those with a pre-existing diagnosis of dementia should be prioritized for surgery. It may seem unreasonable, but multicomponent and early interventions targeting the frailest patients regardless of age should be promoted when caring for older adults with HF, because rehabilitation success can be maximized only with timely and proper management of these subjects.

References

1. Mazzola P, De Filippi F, Castoldi G, et al. A comparison between two co-managed geriatric programmes for hip fractured elderly patients. Aging Clin Exp Res. 2011 Oct-Dec;23(5-6):431-6.

2. Bellelli G, Mazzola P, Morandi A, et al. Duration of postoperative delirium is an independent predictor of 6-month mortality in older adults after hip fracture. J Am Geriatr Soc. 2014 Jul;62(7):1335-40.

3. Mazzola P, Ward L, Zazzetta S, et al. Association Between Preoperative Malnutrition and Postoperative Delirium After Hip Fracture Surgery in Older Adults. J Am Geriatr Soc. 2017 Jun;65(6):1222-1228.

4. Mazzola P, Floris P, Picone D, et al. Functional and clinical outcomes of patients aged younger and older than 85 years after rehabilitation post-hip fracture surgery in a co-managed orthogeriatric unit. Geriatr Gerontol Int. 2018 Aug;18(8):1194-1199. 5) Gandossi CM, Zambon A, Oliveri G, et al. Frailty, post-operative delirium and functional status at discharge in patients with hip fracture. Int J Geriatr Psychiatry. 2021 Oct;36(10):1524-1530.

P – 51

ANALYSIS OF OPERATED ANKLE FRACTURES IN ELDERLY PATIENTS: ARE THEY ALL OSTEOPOROTIC?

Giuseppe Rinonapoli, Carmelinda Ruggiero, Emilio Martini, Gabriele Tucci, Carlo Lauro Maria Trevisan, Antonella Barone

Fragility Fracture Network Italy

Aim

The aim of the study is to verify what type of relationship there is between ankle fractures and osteoporosis. Specifically, the authors aim to understand how the clinical and anamnestic characteristics of patients, along with the radiographic features of these fractures, may contribute to considering them as osteoporotic fractures.

Methods

The study group includes 51 consecutive patients aged 60 years or older operated for ankle fractures from May to October 2022. The fractures were divided into uni-, bi- or trimalleolar based on the plain x-rays. All patients underwent femoral and vertebral bone mineralometry by DXA associated with the FRAX questionnaire.

Results

In the present study ankle fractures in the elderly resulted associated with reduced BMD (76.5% of the total patients examined, 83.8% considering only women) and low-energy traumas (82%). Furthermore, these fractures presented features of increased radiological complexity as bone mass decreases.

Conclusions

Ankle fractures in the elderly exhibit characteristics that suggest a relationship with bone fragility. For these reasons, it might be advisable to initiate a comprehensive fracture risk assessment in elderly patients who experience an ankle fracture in order to evaluate the indication to osteoporosis treatment.

P – 52

CORRELATION OF ALBUMIN LEVELS WITH GLYCEMIC STATUS OF HIP FRACTURED ELDERLY PATIENTS

Ioannis Papaioannou[1], Georgia Pantazidou[2], Thomas Repantis[1], Andreas Baikousis[1]

1 Orthopaedic Department, General Hospital of Patras, Greece
2 Public Health Postgraduate Program, University of Patras, Greece

Objectives

The purpose of this study is to identify if there is any correlation between hypoalbuminemia and hypovitaminosis d in diabetic and non-diabetic elderly with hip fracture.

Material and Methods

We retrospectively studied 114 elderly patients (>65 years old) with low energy hip fractures, with and without history of diabetes mellitus type 2, which were treated in our department during the last two years between January 2021 and January 2023. We measured the values of albumin (alb) and 25 OH vitamin D (VD). The diabetic group was consisted of 65 patients and their counterparts were 49.

Results

The non-diabetic patients had mean value of albumin 2,94 ± 0,56 g/dL, while the diabetic group had 2,94 ± 0,53 g/dL. The results for VD were 10,03 ± 5,43 g/dL and 10,01 ± 5,09 g/dL respectively. In non-diabetic group we found 12 individuals with normal albumin levels (3.4 to 5.4 g/dL) with mean value of VD 10,24 ± 5,93 g/dL and 37 patients with hypoalbuminemia and with mean value of VD 9,96 ± 5,34 g/dL. So, non-diabetic patients with hypoalbuminemia have lower levels of VD, although the statistical analysis didn't reveal any significance as the p-value was 0,743. The diabetic patients with sufficient albumin levels were 16 out of 65 with mean value of VD 12,30 ± 5,45 g/dL, while their counterparts with hypoalbuminemia had mean value of VD 9,26 ± 4,80 g/dL. In this group the difference of VD levels was statistically significant as the p-value was 0,038.

Conclusions

Hypoalbuminemia was found to be prevalent among elderly patients with hip fracture, while VD deficiency and abnormal glycemic status were identified as risk factors for even lower levels of albumin. Decreased albumin should alert physicians for possible malnutrition and subsequence lower VD levels. VD deficiency, hypoalbuminemia and impaired glycemic status consist elements of a circle, which requires a holistic management of an elderly patient with low energy hip fracture.

References

1. Feng X, Yang Y, Zhuang S, Fang Y, Dai Y, Fu Y, et al. Influence of Serum Albumin on HbA1c and HbA1c-Defined Glycemic Status: A Retrospective Study. Front Med. 2021 May 12;8.

2. Bhonsle HS, Korwar AM, Kote SS, Golegaonkar SB, Chougale AD, Shaik ML, et al. Low Plasma Albumin Levels Are Associated with Increased Plasma Protein Glycation and HbA1c in Diabetes. J Proteome Res. 2012 Feb 3;11(2):1391–6.

3. Bhat S, Jagadeeshaprasad MG, Venkatasubramani V, Kulkarni MJ. Abundance matters: role of albumin in diabetes, a proteomics perspective. Expert Rev Proteomics. 2017 Aug 3;14(8):677–89.

4. Jagadeeshaprasad MG, Venkatasubramani V, Unnikrishnan AG, Kulkarni MJ. Albumin Abundance and Its Glycation Status Determine Hemoglobin Glycation. ACS Omega. 2018 Oct 31;3(10):12999–3008.

5. Chıang M-H, Kuo Y-J, Chang W-C, Wu Y, Lın Y-C, Jang Y-C, et al. Association of Vitamin D Deficiency with Low Serum Albumin in Taiwanese Older Adults with Hip Fracture: A Prospective Cross-Sectional Study. J Nutr Sci Vitaminol (Tokyo). 2021 Jun 30;67(3):153–62.

P – 53

BLOOD PRESSURE IN ELDERLY WITH FRACTURE NECK OF FEMUR: AN ATTEMPT TO UNDERSTAND THE HIGH RATE OF FRACTURES

Mohamed Eish[1], Abdulmalik Timamy[1], Eleanor Mae Davis[2], Rahma Thamer[2], Ali Asgar Hatim Ali[2], Eseoghene Elliot Akporiaye[1], Henry Owles [2], Maria Panourgia [2], Mohamed H Ahmed [2]

1 Department of Orthopaedic and Trauma, Milton Keynes University Hospital NHS trust
2 Department of Medicine, Milton Keynes University Hospital NHS trust

Aims

It is well known that orthostatic hypotension can lead to falls. Majority of the guidelines recommended a blood pressure target of <150 mmHg in elderly population (including NICE-National institute of clinical excellence, UK), while other guidelines recommended systolic blood pressure target 140-120 mmHg. As over treatment with anti-hypertensive medication may increase risk of fall and fracture, the aims of the current study were (i) to assess the prevalence of diagnosis of hypertension in our cohort of patients admitted with fracture neck of femur (NOF), (ii) how many patients' antihypertensive medication stopped and modified in hospital, (iii) how many patients' antihypertensive medication altered in the community (after the discharge from hospital). In our hospital all the fracture NOF patients are under the care of the Orthogeriatric Team.

Methods

This was retrospective audit included 400 patients admitted to Milton Keynes University, UK with NOF.

Result

The prevalence of the hypertension diagnosis in medical records was found to be 74.5% (298 patients). While in hospital, 19.4% of patients have their medication stopped, 6.3% changed and 8.7% modified by the Orthogeriatric Team. Further analysis showed that deprescribing and prescribing of amlodipine, ramipril and bisoprolol were among common antihypertensive medication used in the hospital and community. For instance, amlodipine deprescribed in 7% in the hospital, while prescribed in 2.3% in the community. bisoprolol deprescribed in 2.3% in the hospital, while prescribed in 0.6% in the community. Importantly, rampril deprescribed in 5.3% of patients in the hospital, while prescribed in 1.3% in the community. For other antihypertensive medication (losartan, bendroflumethiazide, indapamide, atenolol, spironolactone, doxazocin and furosemide) we noticed these medication very unlikely to be prescribed by hospital physicians, while family medicine physicians may prescribe some of these medication.

Conclusion

Our data show that the presence of an Orthogeriatric team leads to thorough review of the antihyprtensive medications and might reduce the risk of falls after the operation. In the view of the high prevalence of diagnosis of hypertension among NOF patients, the increase in prescribing of antihypertensive medication in the community and variation of blood pressure targets in different guidelines, this suggest the need for further studies to address (i) the need for education among general practitioners about hypertension management in elderly population (ii) community geriatricians and community pharmacists role in safe deprescribing antihypertensive medication and economical benefit and how this (iii) may decease falls associated with risk of NOF and most importantly falls associated with risk of periprosthetic fractures.

P – 55

ENHANCING ELDERLY FRACTURE RECOVERY: THE IMPACT OF COMPREHENSIVE ORTHOGERIATRIC ASSESSMENT PERIOPERATIVELY

Mustafa Muhsen[1], Sherif Zidan[2], Sangeevan Sathiananthamoorthy[1], Harrison Houseago[1], Arpit Patel[1], Abdelaziz Elsalmawy[1]

1 Southend University Hospital
2 North Middlesex University Hospital

Objective

This study aimed to evaluate the effectiveness of perioperative comprehensive orthogeriatric assessment (OCGA) in improving outcomes for elderly fracture patients.

Methods

Between October 2022 and December 2023, 252 patients aged 70 and older were enrolled in the orthopedic ward of Southend University Hospital. Patients with severe osteoporosis, pathological fractures secondary to malignancy, or end-stage renal disease were excluded. The OCGA involved a holistic evaluation of each patient's functional, cognitive, emotional, social, economic, and environmental status. An interdisciplinary team conducted the assessments within 72 hours of admission, pre-operatively, and postoperatively. The multidisciplinary team (MDT) meetings were held biweekly and included an orthogeriatric team, trauma nurse, pharmacist, dietitian, physical and occupational therapists, and speech therapist.

Results

Outcomes were categorized into primary and secondary measures. Primary outcomes included mobility (timed up and go test), decline in ADL function, and mortality rate. Secondary outcomes encompassed postoperative complications (e.g., infection, delirium, pressure sores, gastrointestinal issues), length of hospital stay, readmission rates, and discharge destination (home or a long-term care facility). Comparisons were made with elderly fracture patients treated at SUH from 2018 to 2019, before the implementation of perioperative OCGA. Statistical adjustments were made for age, BMI, smoking, alcohol intake, and socioeconomic status. Both primary and secondary outcomes showed statistically significant improvements.

Conclusion

Perioperative OCGA significantly improves outcomes for elderly fracture patients. The implementation of an interdisciplinary orthogeriatric assessment team for perioperative care is strongly recommended for the management of fractures in older adults.

References

1. Welsh T, Gordon A, Gladman J (2014) Comprehensive geriatric assessment—a guide for the non specialist. Int J Clin Pract 68(3):290–293.

2. Lee T, Marcantonio E, Mangione C et al (1999) Derivation and prospective validation of a simple index for prediction of cardiac risk of major noncardiac surgery. Circulation 100:1043–1049.

3. White SM et al (2016) Secondary analysis of outcomes after 11,085 hip fracture operations from the prospective UK Anaesthesia Sprint Audit of Practice (ASAP-2). Anaesthesia 71(5):506–514.

4. Batsis J et al (2009) Body mass index and risk of non-cardiac postoperative medical complications in elderly hip fracture patients: a population based study. J Hosp Med 4(8):E1–E9.

P – 56

IDENTIFICATION OF INSUFFICIENCY VERTEBRAL FRACTURES ON CT SCANS TO PREVENT FUTURE FRAGILITY FRACTURES

Anita Rhodes, Ellinor Raby, Teresa Mossakowska

Kingston Hospital NHS Foundation Trust

Aim

Vertebral fractures (VFs) are a marker for osteoporosis. If untreated, VFs lead to disability and are costly to National Health Services.

Fracture Liaison Services (FLS) aim to identify at-risk patients and promote bone health to the benefit of patients' long term function and health economics.

VFs are frequently present on imaging but not always reported. Referral for bone health intervention, via imaging identification of VFs can become an important pathway in the prevention of future fragility fractures. A previous audit at our hospital showed that VFs were correctly identified in 58% of CT reports with very few reports contained bone protection advice.

We compared a 2018 audit of VF identification and classification on CT reports, in patients aged 50 years or more. The aim was to identify improvement and need for further education, as well as establishing a new base line prior to our institution's rolling out its FLS, that was postponed by the COVID pandemic.

Methodology

Audit of all CT scans, which included the axial skeleton, during a 1 week period (13-19 November 2023) at a London General District Hospital, in a patient population aged 50yrs or more.

Data were collected on the UK's Royal Osteoporosis Society's (ROS) 4 criteria for recognizing and grading VFs, using the Genant semi-quantitative classification (Grade 1-3).

Results were compared to the previous audit and presented at the Radiology Events and Learning departmental meeting. Further education on reporting and recommendation for further bone health assessment were discussed.

A new reporting code (added through voice recognition or keyboard short cut) of 'FLS' will recommend referral to the Fracture Liaison Service for bone health assessment and plan intervention.

Results

Moderate or severe VFs (Ganant grade 2 or 3) were correctly identified in 72% of reports, a 14% improvement compared to 2018.

Few reports contained recommendations for bone health in both audits: 1 recommendation in 2018 and only 3 in 2023.

There are improvements to be made in reporting of vertebral fragility fractures and opportunities for learning to address these results.

Conclusion

Planned intervention-Staff education and use of reporting code (FLS) to enable direct referral of patients to the hospital's Fracture Liaison Service.

Reduce missed opportunities for intervention and treatment to prevent future fragility fractures. The audit will be repeated to assess progress, once our FLS has started to function, as funding is still preventing its launch.

The impact of the planned changes was evaluated through a subsequent audit conducted after the initial presentation and education based on the findings of the 2018 audit.

The second Audit will again be followed up in order to assess improvement in reporting VFs and the implementation of recommendations for bone health intervention.

References

1. Radiological guidance for the recognition and reporting of osteoporotic vertebral fragility fractures (VFFs) (2021)Available at: https://www.rcr.ac.uk/media/afhpampu/rcr-publications_radiological-guidance-for-the-recognition-and-reporting-of-osteoporotic-vertebral-fragility-fractures-vffs-_may-2021.pdf (Accessed: 17 April 2024).

2. Clinical guideline for the prevention and treatment of osteoporosis (2021) nogg. Available at: https://www.nogg.org.uk/full-guideline (Accessed: 17 April 2024).

3. International Osteoporosis Foundation - Vertebral fractures. Available at: https://www.osteoporosis.foundation/sites/iofbonehealth/files/2019-06/Vertebral-Fracture-Factsheet_ENGLISH.pdf (Accessed: 17 April 2024).

4. Genant HK, Wu CY, van Kuijik C, Nevitt MC. Vertebral fracture assessment using a semi-quantitative technique JBMR. 1993;8(9):1137-48

P – 58

ATYPICAL FRACTURES IN PATIENTS NON TREATED WITH BISPHOSPSHONATES

Giuseppe Rinonapoli, Lorenzo Lucchetta, Carmelinda Ruggiero, Andrea Giusti, Paolo Falaschi, Emilio Martini

Fragility Fracture Network Italy

Aims

Atypical femur fractures (AFF) are associated with long-term use of bisphosphonates (BP). The aim of this study was to identify the characteristics and differences of AFF with and without BP administration. The results obtained could challenge the role of BP in AFF, leading to new studies and more evidence on this correlation.

Methods

This study included patients with low energy subtrochanteric or diaphyseal femur fractures in patients without BP treatment. Between April 2018 and May 2023, 21 eligible AFF cases were identified for this study. In all the cases, a complete medical history was collected to explore fracture risk, vitamin D dosage, and first-level laboratory tests for osteoporosis. A DXA scan at the femoral and vertebral levels was performed in all patients.

Results

In this study of 21 AFF cases, only one patient had taken risedronate for 6 months, but it was discontinued 5 years before the fracture, thus minimizing the risk of bias. The mean age was 74,7 ± 7,74 years, 18 were females and 3 males and the location of the fracture was typically diaphyseal with 13 cases. Prodromic symptoms were registered in 10 cases.

Conclusion

Currently, BP use is associated with an increased risk of AFF, but as stated by the ASBMR, there is still no clear evidence on whether AFF are directly related to BP or to the intrinsic fragility of the bone. Significant uncertainties and biases remain regarding the association between AFF and BP. To date, BP treatment is considered to reduce the risk of fragility fractures, but the correlation remains uncertain. The authors aimed to evaluate and reconsider the influence of BP on AFF so that future studies may help provide more evidence on the etiology of these fractures.

P – 59

RESTORATION OF THE PROXIMAL FEMUR WITH AGN1 AS A BONE VOID-FILLER COMBINED WITH METALL-REMOVAL

Christian Bernhard Frank, Adrian Stuetzle, Lies Desomer

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland

Introduction

It is uncommon to remove implants after nailing pertrochanteric fractures, especially in older patients who are at a high risk of new fractures. However, in certain situations such as the need for a hip prosthesis, femoral neck screw migration, or other salvage procedures, a follow-up operation may be necessary.

Method

We performed 3 surgeries in patients older than 70 with a healed pertrochanteric fracture after a TFNA procedure. All were experiencing severe pain due to a sintered femoral neck blade. Conservative treatment with painkillers and physiotherapy did not work, so we performed implant removal instead of changing the blade only along with an AGN1 injection to fill the void. The operation was completed without complications, and the AGN1 was injected following the standard hardware removal procedure. Due to a higher risk of fracture in the first few weeks after implant removal, we advised her to partially bear weight and crutches.

Results

The procedures were successfully performed without any adverse events to date. The patients did not experience any fractures or substantial pain. Plain radiographs revealed bone formation in the femoral neck and intertrochanteric region, beginning at the tip of the former screw. After 6 weeks, the patients were able to start an intensive outpatient rehabilitation program. After 6 months radiographs revealed, the proximal femur was almost completely restored, AGN1 had been resorbed and replaced by bone, and the patient had no relevant pain and only a few complaints related to postoperative conditions of their hips.

Conclusion

AGN1 bone void-filler is a good option to restore and strengthen the proximal femur after hardware removal.

References

1. AGN1 implant material to treat bone loss: Resorbable implant forms normal bone with and without alendronate in a canine critical size humeral defect model.
Shaul JL, Hill RS, Bouxsein ML, Burr DB, Tilton AK, Howe JG. Bone. 2022 Jan;154:116246. doi: 10.1016/j.bone.2021.116246.

2. Treatment of bone loss in proximal femurs of postmenopausal osteoporotic women with AGN1 local osteo-enhancement procedure (LOEP) increases hip bone mineral density and hip strength: a long-term prospective cohort study. Howe JG, Hill RS, Stroncek JD, Shaul JL, Favell D, Cheng RR, Engelke K, Genant HK, Lee DC, Keaveny TM, Bouxsein ML, Huber B. Osteoporos Int. 2020 May;31(5):921-929.

3. Dual-Layer Spectral-Computed Tomography Enhances the Separability of Calcium-Based Implant Material from Bone: An Ex Vivo Quantitative Imaging Study. Peña JA, Shaul JL, Müller M, Damm T, Barkmann R, Kurz B, Campbell GM, Freitag-Wolf S, Glüer CC. J Bone Miner Res. 2022 Dec;37(12):2472-2482.

P – 60

PROXIMAL ADJACENT SEGMENT DISEASE AFTER LONG SEGMENT POSTERIOR INSTRUMENTATION: INEVITABLE OR PREVENTABLE?

Yiğit Kültür[1], Ahmet Hamdi Olçar[2], Hayrani Cem Karataşlı[3], Mahmut Görkem Gürçınar[4], Mehmet Nuri Erdem[1], Mehmet Tezer[1]

1 Yeni Yüzyıl University, Gaziosmanpaşa Hospital, Department of Orthopedics and Traumatology
2 Sancaktepe Şehit Prof. Dr. İlhan Varank Training And Research Hospital
3 Baltalımanı Metın Sabancı Bone Diseases Training And Research Hospital
4 İstanbul University-Cerrahpaşa, Cerrahpaşa Faculty Of Medicine Department of Orthopedics and Traumatology

Introduction

Adjacent segment disease (ASD), a frequently observed complication following long segment posterior spinal instrumentation, often necessitates additional surgical interventions and can impact patients quality of life. This study aims to investigate the incidence, risk factors, and outcomes of ASD in patients who underwent long segment posterior spinal instrumentation.

Materials and Methods

In this retrospective study, 15 patients who developed and were surgically treated for ASD out of 127 who underwent long segment posterior spinal instrumentation between 2012 and 2022 were examined. Only patients with ASD on the cranial side of the instrumentation were included, while those with caudal ASD were excluded. Collected data included demographic information, perioperative surgical details, and preoperative spinal conditions. The primary outcome was defined as the development of radiographic and symptomatic ASD, while secondary outcomes included the necessity for additional surgical interventions and reported from patient quality of life scores.

Results

The incidence of ASD was found to be 11% five years post surgery. The average follow up period was 33±81 months, ranging from 23 to 42 months. The average age of patients was 65.7±5.3 years, with 9 females and 6 males. ASD was most frequently identified at T9 and T10 cranially. In all patients, instrumentation was extended cranially, and decompression was performed in 12 patients. Multivariate analysis indicated that advanced age, existing degenerative spinal changes, and the length of spinal fusion were significant risk factors for the development of ASD. Patients diagnosed with ASD required more additional surgical interventions and demonstrated lower quality of life scores compared to those without ASD.

Conclusion

ASD is a common complication with significant clinical and quality of life implications following long segment posterior spinal instrumentation. Preoperative assessment of high risk patients considering factors like age, degenerative changes, and fusion length can help mitigate the risk. Surgical techniques such as using cemented screws in upper segments, prophylactic vertebroplasty, and ending the cranial rod with a mild kyphotic contour may reduce the risk of ASD. Further research is needed to develop surgical techniques and preventive strategies to lower the incidence of ASD and improve long term patient outcomes.

References

1. Jagadeesh NH, Bansal K, Chhabra HS. Adjacent segment disease: Current evidence and the role of motion preservation technologies. Indian Spine J 2023;6(1):3–14.

2. Wang T, Ding W. Risk factors for adjacent segment degeneration after posterior lumbar fusion surgery in treatment for degenerative lumbar disorders: a meta-analysis. J Orthop Surg Res 2020;15(1):1–16.

3. Kapetanakis S, Gkantsinikoudis N, Gkasdaris G, Charitoudis G. Treatment of adjacent segment disease with percutaneous transforaminal endoscopic discectomy: Early experience and results. J Orthop Surg 2020;28(3):1–9.

4. Hilibrand AS, Robbins M. Adjacent segment degeneration and adjacent segment disease: The consequences of spinal fusion? Spine J 2004;4(6 SUPPL.):190–4.

5. Bagheri SR, Alimohammadi E, Zamani Froushani A, Abdi A. Adjacent segment disease after posterior lumbar instrumentation surgery for degenerative disease: Incidence and risk factors. J Orthop Surg 2019;27(2):1–6.

6. Hekimoğlu M, Başak A, Yılmaz A, Yıldırım H, Aydın AL, Karadag K, et al. Adjacent Segment Disease (ASD) in Incidental Segmental Fused Vertebra and Comparison With the Effect of Stabilization Systems on ASD. Cureus 2021;13(10):1–9.

7. Saavedra-Pozo FM, Deusdara RAM, Benzel EC. Adjacent segment disease perspective and review of the literature. Ochsner J 2014;14(1):78–83.

P – 62

COMMUNITY GERIATRICIAN AND DEPRESCRIBING OF DIABETES AND HYPERTENSION MEDICATION IN PATIENTS WITH FRACTURE NECK OF FEMUR

Abdulmalik Timamy[1], Mohamed Eish[1], Rahma Thamer[2], Henry Owles[2], Maria Panourgia [2,3], Mohamed H Ahmed [2,3]

1 Department of Orthopaedic and Trauma, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK
2 Department of Medicine and Geriatric, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK
3 Honorary Senior Lecturer of the Faculty of Medicine and Health Sciences, University of Buckingham, UK

Aims

Diabetes and hypertension represent an important and serious challenge for health authorities across the globe. Several studies showed the close presence and association between diabetes and hypertension. Both diabetes and hypertension are associated with high risk of cardiovascular diseases, leading to high level of mortality and morbidity. Additionally, the combination of both it is known to significantly increase the risk of falls. The aim of this study is to investigate the mortality among hypertensive and diabetes patients with fracture neck of femur (NOF) and the preventative role of the community geriatricians.

Methods

This was retrospective audit included 400 patients admitted to Milton Keynes University, UK with NOF.

Result

The prevalence of hypertension was found to be 74.5% and diabetes was 12.5%. The mortality rate among hypertensive patients was found to be 6.3% and among individuals with diabetes was 32%. Importantly, insulin was used in 22% of patients and two antidiabetic medication were used in 34% of patients. Furthermore, two antihypertensive medications were noted among 8.7%of patients. Due to high mortality among individuals with diabetes and hypertension, careful review of the diabetes and antihypertensive medication is needed.

Conclusion

Community geriatricians can contribute in reviewing and adjusting the antihypertensive and antidiabetic medications. Further research is needed to assess the impact of such interventions in decreasing the prevalence of falls leading to NOF and ultimate mortality and morbidity rate.

P – 64

REHABILITATION SETTINGS AND TIMEFRAMES FOR PATIENTS WITH HIP FRACTURE AND COGNITIVE IMPAIRMENT IN DANISH MUNICIPALITIES

Jan Arnholtz Overgaard[1,2], Søren T Skou[2,3], Kristian Steen Frederiksen[4,5], Lauren Alison Beaupre[6], Morten Tange Kristensen[7,8]

1 Department of Rehabilitation, Lolland Municipality, Denmark
2 Research and Implementation unit PROgrez, Næstved-Ringsted-Slagelse Hospitals, Region Zealand, Denmark
3 Research Unit for Musculoskeletal Function and Physiotherapy (FOF), University of Southern Denmark (SDU), Odense, Denmark
4 Danish Dementia Center, Department of Neurology, Copenhagen University Hospital – Rigshospitalet, Denmark
5 Department of Clinical Medicine, Faculty of Heath and Medical Science, University of Copenhagen, Copenhagen, Denmark
6 Faculty of Rehabilitation Medicine - Physical Therapy, University of Alberta, Edmonton, Canada
7 Department of Physical and Occupational Therapy, Copenhagen University Hospital, Bispebjerg-Frederiksberg, Denmark
8 Department of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark

Purpose

To investigate the organization and distribution of physical rehabilitation (PR) for older adults with hip fracture and signs of cognitive impairment (HF-SCI) in the municipalities across Denmark.

Method

Cross-sectional E-survey inviting all 98 municipalities in Denmark. Information was gathered on PR timeframes, use of screening tools and setting of PR after discharge from the acute care hospital and categorized into 24-h care (24H), home-based (HB), outpatient center (OPC), and nursing home (NH) settings. Descriptive statistic was used to compare groups and presented with numbers, range and percentage.

Results

Ninety of 98 municipalities (92%) responded and about 50% reported the use of standardized screening tools for stratification of their provided PR after discharge. Only 4% of municipalities used a screening tool for cognitive impairment. Thirteen percent had written guidance of the provided PR. Occupational– and physiotherapists primarily delivered the PR at the 24H (61%) but otherwise physiotherapists were responsible for the PR across settings. The most common frequency of sessions delivered/week was 1-2 times at OPC (98%), HB (89%), and NH (79%). Overall, the longest session were offered at OPC (93%) and HB (83%) and were between 31-60min, with shorter sessions of 16-45min at 24H (88%) and NH (86%). The shortest PR timeframe was 0-6 weeks at 24H (61%), commonly 5-12 weeks at NH (88%) and HB (89%), with the longest period of 7-12 weeks at OPC (82%).

Conclusion

Few municipalities have formal descriptions of PR provided to older adults with HF-SCI, with variations in setting, duration, and offered sessions.

P – 65

POOR MEN'S NAVIGATION – RELIABLE AND SAFER ISG-ROD OSTEOSYNTHESIS WITH C-ARM DUE TO PREOPERATIVE NAVIGATION SIMULATION

Sheip Panev, Michael Robert Klauser, Helmut Rasch, Christian Bernhard Frank

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland

Introduction

Fragility fractures of the pelvis are an increasing problem. Some of the affected patients benefit from surgery. With plain radiographs, axial CT scans, coronal and sagittal reconstructions alone, it can be hard to identify the safe corridor and correct insertion points for implants during operation under fluoroscopy. Thus, navigation and 3D imaging is widely used for safe and reliable implant placement. In hospitals without this option, the quality of preoperative planning is crucial and can significantly improve the learning curve, patient safety and surgeon security. Here we show our experience with the use of an application for preoperative 3D planning, navigation simulation, and screw placement with a mobile c-arm and 2D imaging.

Method

Syngo.Via® VB60HF5 (Siemens Healthineers) allows you to reorientate 3D CT Data perfectly in all 3 orthogonal planes. By using the software implemented Maximum Intensity Projection (MIP) function, it is possible to simulate conventional inlet and outlet images with multiplanar reconstruction. The simulation of a strictly lateral image with multiplanar reconstruction can be combined with the desired screw position in the other two planes. This makes it possible to identify the entry point for the safe position of the drill wire. Intraoperatively, the X-ray setting can then be compared with the simulated planning images, particularly in the lateral view.

Results

From January 2023 to January 2024, we performed 47 pelvic osteosynthesis. 33 were stabilizations of the dorsal pelvic ring (7 bilateral SI screws, 23 ileosacral rods, 3 other). With preoperative navigation simulation, we could reduce surgery and fluoroscopy time and conversion rate to bilateral screws. Postoperative CT scans correlated strongly with planning.

Conclusion

Navigation and 3D imaging is for sure the best option to have reliable results, reduced fluoroscopy time and a high level of patient safety. Unfortunately, this costly setting is not always available. With a software-based workflow by modelling the standard CT data sets, one can simulate intraoperative navigation and implant placement. The created virtual 2D images using multiplanar reconstructions and MIPS from the original 3D CT Data set gives surgeons more certainty during the operation and allows reliably good results with fluoroscopy.

P – 66

THE EFFECT OF POSTOPERATIVE INTENSIVE CARE UNIT LENGTH OF STAY ON ONE-YEAR MORTALITY IN GERIATRIC HIP FRACTURES

Batuhan Gencer, İhsan Özdamar, Turgut Dinçal, Aqshin Cabbarlı, Deniz Gülabi

Marmara University Department of Orthopaedics and Traumatology

Introduction

Proximal femur fracture is one of the most urgent orthopedic problems in elderly patients (1,2). Approximately 5-10% of patients die in the first month and 20-25% in the first year after surgery (3,4). Among the factors affecting mortality, there are many reported parameters including age, ASA score, hemoglobin at initial presentation, and postoperative creatinine (5). Postoperative intensive care unit follow-up may be effective on morbidity and mortality in geriatric patients due to reasons including difficulty in care, risk of bacterial transmission, and psychosocial effects. Our study aimed to investigate one-year mortality in geriatric hip fracture patients followed up in the postoperative intensive care unit and to examine the relationship between the duration of postoperative intensive care unit stay and mortality.

Material Method

In our study, all patients over 65 years of age who were treated with a diagnosis of femoral neck or intertrochanteric fracture between 2023 and 2024 and who were followed up in the intensive care units of our hospital after surgery were included. Patients whose current health status could not be queried through the telephone or the online healthcare system (e-nabız) were excluded from the study. Patients were divided into two groups; the study group consisting of patients who died within one year and the control group consisting of patients whose one-year follow-up was completed. Demographic data, diagnoses, type of treatment and anesthesia, ASA score, number of preoperative and postoperative intensive care unit days, and complications developed in one-year follow-up were compared in all patients.

Results

No significant difference was observed between the study and control groups in terms of demographic data, type of surgery and anesthesia, ASA score, preoperative intensive care unit stay, and complications within one year ($p>0.05$). A significant difference was observed between the number of days of postoperative intensive care unit stay and one-year mortality rates ($p=0.031$). ROC curve analysis showed that a postoperative intensive care follow-up period of 4.5 days or more had a sensitivity of 59% and a specificity of 77% in terms of mortality, and the mortality rate reached 100% in cases with a postoperative intensive care follow-up period of more than 15 days.

Conclusion

It is controversial whether mortality rates increase due to increased intensive care unit length of stay or whether patients with high mortality rates are not suitable for ward follow-up in geriatric hip patients. However, in any case, it should be known that increased intensive care unit length of stay is associated with higher mortality rates, and this information should be taken into consideration when providing information regarding prognosis to patient's relatives. Postoperative patients should be admitted to the ward as soon as they become suitable for ward follow-up.

References

1. Suerkulov BT. Bipolar hip arthroplasty in elderly and senile patients with subcapital fractures. Vestnik KGMA im. I.K. Akhunbaeva. 2015;(1):115-117. (in Russian)

2. De Vincentis A, Behr AU, Bellelli G, Bravi M, et al. Management of hip fracture in the older people: rationale and design of the Italian consensus on the orthogeriatric co-management. Aging Clin Exp Res. 2020;32(7):1393-1399. doi:10.1007/s40520-020-01574-4

3. Brauer CA, Coca-Perraillon M, Cutler DM, Rosen AB. Incidence and mortality of hip fractures in the United States. JAMA. 2009 Oct 14;302(14):1573-9. doi: 10.1001/jama.2009.1462.

4. Blomberg J. Femoral Neck Fractures. [Updated 2020 Sep 9]. In: Orthobullets [Internet]. Available from: https://www.orthobullets.com/trauma/1037/femoral-neck-fractures

5. TOTBID Orthopaedic Trauma Branch, X. Advanced Trauma Course "Geriatric Lower Extremity Fractures".10-11 January 2020

P – 67

ANALYSIS OF THE PERFORMANCE OF ITALIAN TRAUMA CENTERS ON THE BASIS OF THE DATA OF P.N.E. (NATIONAL OUTCOME PROGRAMME)

Giuseppe Rinonapoli, Carmelinda Ruggiero, Emilio Romanini, Gabriele Tucci, Paolo Falaschi, Fabio Monzani

Fragility Fracture Network Italy

Aim

P.N.E. (Programma Nazionale Esiti, National Outcome Programme) is an evaluation tool to support clinical and organizational audit programs. It is managed by AGENAS (National Agency for Regional Health Services) and has the aim of evaluating the outcomes of health interventions in the Italian Health Service. The aim of the study was to match the data of the P.N.E. relating to hip fractures with some indicators in the largest Italian trauma centers.

Methods

The Authors collected the data of P.N.E. in the field of hip fractures of the Orthopaedics and Traumatology Departments whose volume of hospitalizations for hip fractures was at least 100 per year. Then, they made a comparison between volume of hospitalizations some parameters: surgery within 2 days and 48 hours, mortality, percentage of non-operated patients.

Results

From the analysis of the data, 182 trauma centers have a volume of hospitalizations for hip fractures between 100 and 199, 120 between 200 and 299, 54 between 300 and 399, 28 between 400 and 499, 14 more than 500. The Authors did not find any significant differences in terms of percentages of surgery done in two days or 48 hours compared with the volume of hospitalizations. The different number of treated hip fractures did not influence the mortality, and either the comparison between fractures operated within 48 hours and the mortality at one month did not show significant differences. The significant results were related to the geographical differences: South of Italy, in comparison with North and Center of Italy, showed a lower percentage of patients operated in two days, a higher percentage of non-operated patients and higher mortality within one month from surgery. North Italy has a significant lower mortality at one year from surgery versus Center and South.

Conclusions

The most interesting results are the lack of statistical significance between percentage of patients operated in 48 hours and mortality and the geographical differences in surgery within 48 hours, number of non-operated patients and mortality.

P – 68

RESULTS OF LONG-TERM OBSERVATION OF PATIENTS WITH RHEUMATOID ARTHRITIS: EMPHASIS ON FRAGILITY FRACTURES

Polina Kovalenko, Irina Dydykina, Alexander Smirnov

V. A. Nasonova Research Institute of Rheumatology

Aim

To assess vertebral/nonvertebral fragility fracture frequency and to study their probable causes in patients with rheumatoid arthritis with long-term observation.

Materials and Methods

120 women with rheumatoid arthritis (RA) (EULAR/ACR 2010 criteria) were included in an open-label, prospective, cohort study (observation period 9.5 ± 1.9 years), the average age at baseline was 54.3 ± 8.9 years, RA duration at baseline 14.0 ± 9.8. It was performed at baseline and in dynamics: generally accepted clinical examination, X-ray absorptiometry with measurement of bone mineral density (BMD) in the lumbar spine (L1-L4), femoral neck (FN) and proximal hip (PH); X-ray of thoracic and lumbar spine with assessment of vertebral deformations by Genant method.

Results

In dynamics there were noted a decrease in the number of patients taking glucocorticoids (GC) and a decrease of the RA activity (DAS-28). After the baseline examination 83(69%) patients had a diagnosis of osteoporosis (OP), in dynamics - 95(79%). 94% of patients with OP reported in dynamics on the implementation of the recommendations, patients took mainly bisphosphonates or denosumab. A third (36%) of patients with OP received treatment for more than 3 years continuously. Other patients received intermittent treatment (courses), the average duration of anti-OP therapy was 43 months (3.5 years). During the observation period, 64(53%) patients experienced the occurrence of 104 fragility fractures, including 52 fractures in 30 patients repeatedly. 69(66%) fractures were vertebral (in thoracic or lumbar spine) and 35(34%) – nonvertebral. Among patients with vertebral fractures detected during the observation period, 26(22%) patients had newly occurring vertebral fractures, and 23(19%) patients had repeated fractures. Patients from the group of fragility fractures during the follow-up period (n=64) were significantly more likely to have fractures before inclusion in the study: 30(47%) vs 12(21%) patients ($p=0.004$), and also had an initially longer duration of RA, initially and in dynamics received GC at a larger average daily dose, had a larger cumulative dose and duration of GC intake. Differences ($p<0.05$) were also established during instrumental examination of patients: in the group with fractures in dynamics the deformation index in the thoracic spine was significantly lower ($p<0.0001$), the BMD of the L1-L4 was lower at baseline, as well as in the FN and PH at baseline and in dynamics.

Conclusions

During long-term follow-up of patients with RA it was noted an increase in the number of patients with osteoporosis, adherence to anti-OP therapy was low. More than half of the patients had low-energy fractures during the observation period, 2/3 of which were vertebral. History of previous fragility fracture, longer duration of RA, longer duration and dose of GC, baseline lower BMD of the main skeletal sites are considered as risk factors for fragility fractures in patients with RA.

P – 69

HALLUX VALGUS IN THE OLDER AGE GROUP. DOES THE SURGICAL PROCEDURE CHANGE WITH INCREASING AGE-RELATED ADVANCED DEFORMITY?

Ufuk Arzu, Batuhan Gencer, Serdar Satılmış Orhan, Yılmaz Kerem Akayoğlu, Deniz Gülabi

Marmara University Pendik Training and Research Hospital Department of Orthopaedics and Traumatology

Introduction

Hallux valgus is a complex deformity of the first ray and is accompanied by symptoms and deformities in the lesser toes that can cause toe pain and difficulty with shoe wear. When the valgus angle of the first metatarsophalangeal joint exceeds 30 -35 degrees, it results in the pronation of the great toe. With this pronation, the adductor hallucis pulls the great toe farther into the valgus, and with the combined effects of the flexor hallucis brevis, flexor hallucis longus, adductor hallucis, and extensor hallucis longus the Hallux Valgus Angle (HVA) increases. As a generally accepted view, hallux valgus is a progressive deformity, and symptoms, hallux valgus angle, and intermetatarsal angle increase with age. Based on this information, we hypothesized that there may be higher HVA and intermetatarsal (IMA) angles in patients operated on for hallux valgus in the older age group, and we retrospectively investigated the differences in the surgical procedure in this age group.

Materials Methods

Patients operated for hallux valgus between 2011 and 2024 were retrospectively reviewed. Patients who underwent isolated bunionectomy, tarsal corrective osteotomy, and isolated phalanx osteotomy were excluded from the study. In addition to demographic information, operation type, preoperative and postoperative HVA and IMA, and angular changes postoperative complications, active complaints at the last follow-up were compared.

Results

Of the 105 operated patients, 15 (14.3%) were over 65. There was no significant difference between patients under and over 65 years of age regarding gender, side, complications, and active complaint at the last follow-up ($p>0.05$). There was a significant difference between the groups in terms of the type of operation and it was observed that proximal osteotomies were not preferred in the older age group, but arthrodesis was preferred at a higher rate (26.7% vs. 12.2%; $p=0.033$). There was no significant difference between preoperative and postoperative HVA and IMA between younger and older patients.

Conclusion

Although the deformity is progressive since the decision to operate is generally made at similar HVA and IMA angles regardless of age, chevron osteotomy, which is a distal metatarsal osteotomy and is more familiar to most orthopedists, is performed more frequently in all-age groups. However, we believe that the reason why arthrodesis techniques are preferred instead of osteotomy in the older age group is due to both poor bone quality and advanced degenerative joint changes. At the same time, the fact that the number of patients is lower in the older age group can be interpreted as the person getting used to living with this deformity, decreasing their daily activities, or moving away from aesthetic concerns.

P – 70

HIP FRACTURES - LETS TALK ABOUT MEN

Rachael Marie Doyle, Rachel Sullivan, Cliona Small, Shian Khan, Shane O'Hanlon, Marie Therese Cooney, Conor Hurson

St. Vincent's University Hospital, Dublin, Ireland

Aims

To assess gender differences in mortality and functional outcomes among patients post hip fracture surgery.

Methods

A prospective observational study reviewing all patients over 60 years of age admitted with a neck of femur fracture to a tertiary hospital between February 2016 and July 2018. Data was collected on baseline demographics such as age, living circumstance, type of surgery and discharge destination. During their orthogeriatric assessment, pre-admission functional scores were calculated to include Clinical frailty scale(CFS), New Mobility Score(NMS) and the Functional Recovery Score (Zuckerman). These scores were repeated at the virtual clinic one year later.

Results

634 patients were admitted with neck of femur fractures of which 541 had complete data. 7.74% were lost to follow up. There was a F:M ratio of 3:1. The average age for both gender was 82 years. The length of stay was an average of 18 days for females and 19.7 days for men.

At one year, the overall mortality rate was 23.8%(N:151). The mortality rate for men was 31.8% versus 20.9% for females. (OR: 1.75 p=0.005). Even after adjusting for age,frailty scores and admissions from nursing homes, the difference in mortality remained significant (OR 1.99 (CFS), OR 1.86 (FRS), OR: 1.9 (NMS) p<0.005). Compared to women, the mortality risk in men was the equivalent of being 15 years older than in women (OR 1.89 p=0.03).
Men were twice as likely to be in a nursing home or dead at one year even when adjusting for age and frailty (OR 2.06 p=0.01) and five times more likely if the CFS was ≥6 (OR 5.5, p,<0.05)

With regard to functional scores on admission, 48% of men and 41.7% of women were non-frail(CFS1-4). 30% of men and 33.4% of women were classified as moderately frail (CFS 5-6) and 12.5% of men and 16.8% of women were severely frail (CFS 7-8).
In the group who survived to one year, 44% had no change in their frailty level (31% men and 50% women, p for diff 0.001). There was a statistical difference in the drop in frailty scores between genders with men becoming more frail at one year. (56% men and 43% of women, p for diff 0.0292)/ THe mean New Mobility Score for men pre-operatively was 5.76. This dropped to 4.9 at one year. For women, preoperatively it was 5.63 and at one year it was 4.84.
For the Functiuonal Recovery Score, the average score for men on admission was 69.85 and for women it was 66.36. This fell to 61.67 and 62.79 for men and women respectively.

Conclusions

Men were twice as likely to be dead at one year compared to females. This cannot be explained by other confounders such as age or increased frailty and this was evident across all frailty scores with the mortality rate in men equivalent to being 15 years older than women.

Reference

1. Zuckerman, Joseph D; Koval, KennethJ; Aharonoff, GIna B; Hiebert, Rudi; Skovron, Mary Louise. Journal of Orthopaedic Trauma 14(1):p 20-25, January 2020.

P – 72

INTRA-RATER RELIABILITY OF A VERBAL RATING SCALE TO MEASURE POSTOPERATIVE FATIGUE AFTER HIP FRACTURE SURGERY

Theresa Bieler[1], Inger Birgitte Bährentz[1], Signe Østergaard Zoffmann[1], Camilla Kampp Zilmer[1], Morten Tange Kristensen[1,2]

1 Department of Physical and Occupational Therapy, Copenhagen University hospital, Bispebjerg and Frederiksberg Hospital
2 Department of Clinical Medicine, University of Copenhagen

Aim

Postoperative fatigue is one of the most frequent reasons for patients not achieving an independent basic mobility level and not completing in-hospital physiotherapy after hip fracture surgery. A Verbal Rating Scale (VRS) could be an appropriate measure to assess fatigue in acute care settings. Thus, the aim of this pilot study was to investigate the intra-rater reliability of postoperative fatigue assessed with a 5-point VRS in patients after hip fracture surgery.

Methods

We included Danish speaking, home-dwelling patients able to walk independently indoor before their acute hip fracture. The same tester asked the patients to rate their perceived postoperative fatigue at rest by using a 5-point VRS (no, slight, moderate, severe, unbearable fatigue) two times with a 5-minute interval. A priori, we considered that the distance between "no fatigue" and "slight fatigue" would be smaller than between the other categories. Accordingly, we used a non-linear weighted Kappa statistic.

Results

31 patients (18 women, 13 men) with a mean (SD) age of 76 (10) years referred to in-hospital physiotherapy after hip fracture surgery were included. Fatigue was assessed mean (SD) 3.5 (2) days post-surgery. The Kappa coefficient was 0.78 (CI-95%: 0.61-0.95) and total agreement was 81%.

Conclusions

Our findings suggest that in patients with hip fracture the intra-rater reliability of postoperative fatigue measured with a 5-point VRS is substantial. Clinical implication: a 5-point VRS could be an appropriate measure to assess postoperative fatigue after hip fracture surgery in daily clinical practice in the acute hospital.

P – 74

COMPREHENSIVE GERIATRIC ASSESSMENT TO UNDERSTAND THE CHARACTERISTICS AND CARE NEEDS OF OLDER ORTHOPEDIC SURGERY PATIENTS

Meltem Koca[1], Fatma Nur Barlık[1], Beyza Çubukçu[1], Hüseyin Bilgehan Çevik[2], Sema Cihan[2], Osman Yağız Atlı[2], Osman Burak Keçelioğlu[2], Evrim Duman[2], Gözde Şengül Ayçiçek[1]

1 Department of Geriatric Medicine, Etlik City Hospital, Ankara, Türkiye
2 Department of Orthopedic Surgery, Etlik City Hospital, Ankara, Türkiye

Aims

Recognition of older orthopedic surgery patients' clinical characteristics and most common reasons for hospitalization was aimed as a first step to establish an orthogeriatric care model in our center, which is a tertiary city hospital complex.

Methods

We launched a routine geriatric consultation on a 22-bed orthopedic ward. A comprehensive geriatric assessment was performed by a geriatrician and a gerontologist on orthopedic surgery patients aged 65 and older to understand the characteristics and needs of this patient population according to their reasons for hospitalization.

Results

Eighty-five older patients with a median age of 75 (IQR=8), of whom 65.9% were female, were consecutively included. Patients hospitalized for osteoporotic fractures constituted 36.5%, while the reasons for hospitalization for the rest included elective arthroplasty for osteoarthritis (43.5%), complications such as prosthetic infections or dislocations (11.8%), and tumor excisions, amputations, and other rare causes (8.2%). The median scores for Katz activities of daily living (ADL) and Lawton Brody instrumental ADL were 5 (IQR=1) and 7 (IQR=3.5), respectively. Cognition was evaluated using the Mini-Cog and 4AT tools, with median scores of 3 (IQR=2) and 1 (IQR=3), respectively. Nutritional screening with the Mini Nutritional Assessment - Short Form yielded a median score of 10 (IQR=3), and 25-OH vitamin D levels (ng/mL) were commonly below the normal range, with a median of 13 (IQR=17). Frequencies of polypharmacy (33.8%) and a positive fall history in the previous year (50.6%) were remarkably high.

Conclusions

Comprehensive geriatric assessment is a useful tool to determine and prioritize the specific needs of patients for a targeted orthogeriatric care approach.

P – 75

DIABETES MEDICATION AND TIGHT CONTROL IN ELDERLY WITH FRACTURE NECK OF FEMUR: ATTEMPT TO EXPLAIN HIGH RATE OF FRACTURES

Rahma Thamer[1], Mohamed Eish[2], Abdulmalik Timamy[2], Henry Owles [1], Maria Panourgia[1,3], Mohamed H Ahmed [1,3]

1 Department of Medicine and Geriatric, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK
2 Department of Orthopaedic and Trauma, Milton Keynes University Hospital NHS Foundation Trust, Eaglestone, Milton Keynes, Buckinghamshire UK
3 Honorary Senior Lecturer of the Faculty of Medicine and Health Sciences, University of Buckingham, UK

Aims

Consensus about management of diabetes in elderly population recommended, in healthy prefrail elderly individual aim for HbA1c between 7-7.5%, moderately frail aim for HbA1c 7.5-8% and severely frail the target can be between 7.5-8.5%. It was shown that low and high levels of glycaemic control were associated with an increased mortality risk (variability in glycaemic control can be another factor). Therefore, a stable glycaemic level in the middle range is associated with lower risk in elderly population. The aims of the current study were to assess the prevalence of diabetes in our cohort of patients admitted with fracture neck of femur (NOF) and assess the prescribing and deprescribing of antidiabetic medication. As hypoglycaemia induced with over treatment with anti-diabetic medication may lead to fall and increase risk of fracture. In our hospital all the fractured NOF are under the care of the Orthogeriatric team.

Methods

This was retrospective audit included 400 patients admitted to Milton Keynes University, UK with NOF.

Result

The prevalence of diabetes was found to be 12.5% (50 patients) in this cohort of patients. The prevalence of diabetes among patients with hypertension (298 patients) was found to be 11.7%. Only four patients were found to have type 1 and 46 patients with type 2 diabetes. Importantly, 36% of patients with diabetes were found to have HbA1c equal or less than 6.5%, while 26% with HbA1c in the range of 6.5% to 8%. Only 10% with HbA1c more than 8%, while 10% of patients with HbA1c of more than 9%. HbA1c was not recorded in 18% of patients. Furthermore, 38% of patients have their antidiabetic medication adjusted, 30% not on antidiabetic medication (diagnosed with diabetes in the past) and 32% their antidiabetic medication not changed during hospital admission.

Conclusion

Beside high prevalence of diabetes, over one third of patients have HbA1c equal or less than 6.5% as well as their antidiabetic medication being adjusted. Further research is needed to assess whether individualized targeted HbA1c in frail elderly population may decrease the prevalence of fall leading to NOF.

P – 77

RELATIONSHIP BETWEEN INTERTROCANTERIC FEMUR FRACTURE AND DEGENERATIVE SCOLIOSIS

Yiğit Önaloğlu

İstanbul Başakşehir Çam and Sakura City Hospital, İstanbul, Türkiye

Objective

To investigate the incidence of degenerative scoliosis and additional fractures in elderly patients with intertrochanteric femur fractures.

Materials and Method

Patients with intertrochanteric femur fractures operated in our hospital in 2022–2023, were retrospectively analyzed. Sixty operated-on patients with intertrochanteric femur fractures were included in the study. The causes of the fracture were all due to a fall from the same level. All patients underwent surgical proximal femur nailing (PFN). Only 1 patient underwent open reduction and cable fixation; all other patients underwent closed reduction.

Results

The mean age of the 60 operated patients was 80 years. Thirteen (22%) of the patients had another concurrent fracture accompanying the intertrochanteric femur fracture. These fractures were, in descending order: 7 distal end of radius, 3 proximal humerus, 1 radial head, 1 pubis ischium, and 1 scapula fracture. Among these comorbid fractures, only three distal end fractures of the radius were treated surgically. When the old films of the patients available in the system were analyzed, degenerative scoliosis was found in 24 of 60 patients (40%). Of these 24 patients, 2 had been previously operated on for a lumbar vertebral fracture and 1 for lumbar spinal stenosis. Only 3 of 60 patients (5%) underwent revision due to PFN cut-out. It was learned from the relatives that 27 patients (45%) were death.

Discussion and Conclusion

A retrospective examination of the patients revealed that bone mineral density measurements were almost never performed before the fall. When the intertrochanteric femur fractures and concomitant fractures were analyzed, all of them were osteoporotic fractures caused by low-energy trauma (1). When the causes of the fall were analyzed, the most probable cause was gait and balance problems (2). Degenerative scoliosis, which we observed in 40% of all patients, can present with back and leg pain, neurogenic claudication, and weakness (3). When patients with a high risk of osteoporosis and degenerative scoliosis are encountered in the outpatient clinic, bone mineral density measurements should be requested, and both medical and surgical treatment options should be well evaluated for this spinal pathology that may cause falls.

References

1. Eastell R, O'Neill TW, Hofbauer LC, Langdahl B, Reid IR, Gold DT, Cummings SR. Postmenopausal osteoporosis. Nat Rev Dis Primers. 2016 Sep 29;2:16069.

2. Kim IH, Lee SU, Jung SH, Lee SJ, Lee SY. Effectiveness of the computerized balance rehabilitation after hip fracture surgery: A study protocol of a prospective and open-label clinical trial. Medicine (Baltimore). 2018 Sep;97(36):e12199.

3. Aebi M. The adult scoliosis. Eur Spine J. 2005 Dec;14(10):925-48.

P – 78

MISDIAGNOSED GROIN PAIN IN AN ELDERLY - INTERDISCIPLINARY NETWORK AS A TOOL FOR COST-EFFECTIVE WORK-COLLABORATION

Oskar Kwaczynski, Andrej Maria Nowakowski, Massimo Ruffo, Christian Bernhard Frank

Department for Orthopaedics and Traumatology, Cantonal Hospital Baselland, Switzerland

Introduction

We present an uncommon case of misdiagnosed groin pain in an elderly man. The elderly population is more susceptible to various medical conditions, including heart disease and joint problems, which can present with overlapping symptoms and lead to diagnostic dilemmas. Understanding the interplay between various medical conditions is crucial for accurate diagnosis and treatment. This case highlights the importance of interdisciplinary collaboration and the use of cost-effective diagnostic tools to provide effective treatment to patients in need.

Methods

We describe the case of an 87-year-old male with a history of heart disease and coronary angiography who developed groin pain. After exclusion of a potential hernia in another healthcare facility, a CT scan was performed for further evaluation after reporting of a foreign body (FB) in his thigh that was thought to be the source of irritation to the femoral nerve or other groin structures. The scan revealed a broken part of the angiography catheter, located at least 1.4 cm away from the femoral nerve and vessels, and a severe case of coxarthrosis. Still convinced that the FB was the reason for his pain, the patient was referred to our department for removal. A thorough medical history and various diagnostic techniques then revealed a painful coxathrosis. An intraarticular infiltration was performed to further evaluate the patient's condition and to provide immediate pain relief.

Results

There are various differential diagnosis of hip and groin pain, like pain from the lumbar spine, lower abdomen, musculoskeletal system or bony pelvis. In the elderly, the differentiation between hip, pelvic and groin pain can be demanding. In this case with respect to the patient’s individual medical history the diagnostic work-up was completed with CT scan. The scan confirmed the presence of a FB, which was not irritating the femoral nerve and vessels. Coxarthrosis as the leading cause of pain was detected with basic diagnostic tools like history, quality of symptoms, physical examination and injection with local anesthetic. The patient got a hip prosthesis and had the FB removed at the same operation.

Conclusion

This case highlights the importance of a thorough evaluation and collaboration among healthcare professionals when diagnosing complex medical conditions in older patients. In this patient with groin pain and history of heart disease and coronary angiography, the cause of the pain was not immediately apparent. It was only through the expertise of different healthcare professionals, who considered all aspects of the patient's personal and medical history, that the correct diagnosis was made. In future, we are likely to encounter more patients with complex medical histories. Interdisciplinary collaboration among healthcare professionals is crucial to differentiate between different types of pain and save money in healthcare systems.

P – 79

DOES PTH LEVELS DIFFER IN DIABETIC AND NON-DIABETIC ELDERY HIP FRACTURED PATIENTS?

Ioannis Papaioannou[1], Georgia Pantazidou[2], Thomas Repantis[1], Andreas Baikousis[1]

1 Orthopaedic Department, General Hospital of Patras, Greece
2 Public Health Postgraduate Program, University of Patras, Greece

Objectives

The purpose of this study is to identify if there is any difference of parathormone levels between diabetic and non-diabetic elderly patients with hip fracture.

Material and Methods

We retrospectively studied 114 elderly patients (>65 years old) with low energy hip fractures, with and without history of diabetes mellitus type 2, which were treated in our department during the last two years between January 2021 and January 2023. We measured the values of 25 OH vitamin D (VD), parathormone (PTH) and glomerular filtration rate (eGFR). The diabetic group was consisted of 65 patients and their counterparts were 49. Patients with chronic kidney disease (CKD) grade 4 and 5 were excluded from the study, because severe renal failure results in reduced synthesis of calcitriol and secondary hyperparathyroidism.

Results

VD levels were similar in both groups (10,03 ± 5,43 g/dL non-diabetic vs 10,01 ± 5,09 g/dL diabetic) without any statistically significant difference (p=0,986). PTH levels differ significantly between the two groups (p= 0,018). PTH levels in non-diabetic patients were 79,71 ± 57,6 pg/mL, while in diabetic patients the values were 56,42 ± 45,57 pg/mL. The e GFR values were 72,14 ± 24,81 and 66,55 ± 21,43 for non-diabetic and diabetic patients respectively. Non-diabetic patients were found to have increased e GFR values, although the difference wasn't statistically significant (p= 0,178).

Conclusions

Secondary hyperparathyroidism is common among elderly due to two main causes: VD deficiency and renal failure. SHPT is often associated with disturbances of bone turnover, as well as visceral and vascular calcifications, which are responsible for cardiovascular morbidity and mortality. PTH acts as a stimulus for increased osteoclast activity, which results in calcium and phosphorus resorption from the bone. As GFR levels do not differ dramatically, a possible explanation of the difference between PTH levels is the dysfunction of parathyroid gland due to diabetic microangiopathy and the fact that only severe VD deficiency is correlated with increased levels of PTH. In our study severe hypovitaminosis d was prominent in non-diabetic group (59,2% vs 56,9%).

References

1. Sugimoto T, Ritter C, Morrissey J, Hayes C, Slatopolsky E. Effects of high concentrations of glucose on PTH secretion in parathyroid cells. Kidney Int. 1990 Jun;37(6):1522–7.

2. Paula FJA, Lanna CMM, Shuhama T, Foss MC. Effect of metabolic control on parathyroid hormone secretion in diabetic patients. Brazilian J Med Biol Res. 2001 Sep;34(9):1139–45.

3. Sun S, Wang Y, Ma W, Cheng B, Dong B, Zhao Y, et al. Normal parathyroid hormone and non-proliferative diabetic retinopathy in patients with type 2 diabetes. J Diabetes Investig. 2021 Jul 2;12(7):1220–7.

P – 81

ADULT PATIENTS EXPERIENCES ON CLOSED REDUCTION TREATMENT OF DISTAL RADIUS FRACTURE IN THE EMERGENCY DEPARTMENT

Charlotte Abrahamsen[1,2], Christina Østervang[4,2], Bjarke Viberg[3,2], Charlotte Myhre Jensen[3,2]

1 Department of Orthopaedic Surgery & Traumatology & Department of Emergency Medicine, Lillebaelt Hospital Kolding, Denmark
2 University of Southern Denmark, Denmark
3 Department of Orthopaedic Surgery & Traumatology, Odense University Hospital, Denmark
4 Department of Emergency Medicine, Odense University Hospital, Denmark

Background

Distal radius fractures (DRF) are prevalent injuries managed frequently in emergency departments (ED). While numerous studies focus on surgically treated DRF patients, there is a lack of research on non-surgically treated patients' early experiences post-injury.

Aim

To explore adult patients' initial experiences following closed reduction treatment of DRF in the ED

Methods

This qualitative study involved semi-structured telephone interviews with 21 patients who underwent closed reduction treatment at two hospitals in Southern Denmark. Interviews were conducted within the first week post-treatment and analyzed thematically.

Results

Patients were aged 42 to 91 and two were men. Three major themes emerged: 1) Pain Management: Patients reported significant pain during waiting periods and treatment, indicating a need for improved pain management strategies. 2) Information Dissemination: Participants expressed a need for clearer, continuous communication about their treatment and recovery expectations. 3) Holistic Concerns: Patients were anxious about future functional abilities, especially those with dominant hand fractures, underscoring the need for holistic patient care that addresses psychological and social dimensions.

Conclusion

Effective pain management and comprehensive, clear communication are crucial in the initial treatment phase of DRF. Acknowledging patients' broader concerns can enhance the quality of care and support better recovery outcomes.



FFN

Fragility Fracture Network