University Hospitals Bristol NHS
NHS Foundation Trust

Orthogeriatrics

Evidence Update

September 2017

(Quarterly)

Respecting everyone
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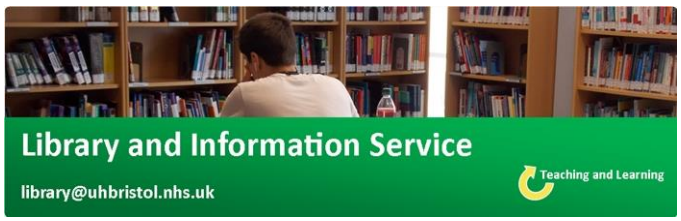

Training Sessions 2017

All sessions are one hour

September (13.00-14.00)

Fri 1st	Literature Searching
Mon 4th	Critical Appraisal
Tue 12th	Interpreting Statistics
Wed 20th	Literature Searching
Thu 28th	Critical Appraisal

October (12.00-13.00)

Fri 6th	Interpreting Statistics
Mon 9th	Literature Searching
Tue 17th	Critical Appraisal
Wed 25th	Interpreting Statistics

November (13.00-14.00)

Thu 2nd	Literature searching
Fri 10th	Critical Appraisal
Mon 13th	Statistics
Tue 21st	Literature searching

Your Local Librarian – Jo Hooper

Whatever your information needs, the library is here to help. As your outreach librarian I offer **literature searching services** as well as training and guidance in **searching the evidence** and **critical appraisal** – just email me at library @uhbristol.nhs.uk

OUTREACH: Your Outreach Librarian can help facilitate evidence-based practise, as well as assisting with academic study and research. We can help with **literature searching, obtaining journal articles and books**, and setting up individual **current awareness alerts**. We also offer one-to-one or small group training in **literature searching, accessing electronic journals, and critical appraisal**. Get in touch: library@uhbristol.nhs.uk

LITERATURE SEARCHING: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence. Please email requests to library@uhbristol.nhs.uk

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Exercise:Study Design Timeframes.....

Updates

NICE National Institute for Health and Care Excellence

Signal: Comprehensive assessment may reduce risk of delirium after hip fracture
Source: NIHR Dissemination Centre - 29 August 2017 Read Summary

Guidelines for the Provision of Anaesthetic Services (GPAS) 2016 [PDF]
Source: Royal College of Anaesthetists - 03 July 2017

Bisphosphonates for treating osteoporosis - guidance (TA464)
Source: National Institute for Health and Care Excellence - NICE - 09 August 2017
Read Summary - UKMi comment

2017 American College of Rheumatology/American Association of Hipand Knee Surgeons Guideline for the perioperative management of antirheumatic medication in patients with rheumatic diseases undergoing elective total hip or total knee arthroplasty [PDF]
01 August 2017 - Publisher: American College of Rheumatology (ACR) Read Summary

Falls and fracture consensus statement: Resource pack [PDF]
Source: Public Health England - 13 July 2017 - Publisher: Public Health England UKMi comment

Summary of recommendations for clinical preventive services [PDF]
01 July 2017 - Publisher: American Academy of Family Physicians Read Summary

Developing a multidisciplinary rehabilitation package following hipfracture and testing in a randomised feasibility study: Fracture in the Elderly Multidisciplinary Rehabilitation (FEMuR)
Source: NIHR Journals Library - Health Technology Assessment - 24 August 2017 - Publisher: NIHR Journals Library – Health Technology Assessment Read Summary

Cochrane Library

Early discharge hospital at home
Daniela C Gonçalves-Bradley , Steve Iliffe , Helen A Doll , Joanna Broad , John Gladman , Peter Langhorne , Suzanne H Richards and Sasha Shepperd
Online Publication Date: June 2017

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

Overview of geriatric rehabilitation: Patient assessment and common indications for rehabilitation

- Hip fracture
- Summary and recommendations

Hospital management of older adults

- Geriatric units
- Summary and recommendations

Comprehensive geriatric assessment

- Acute geriatric care units
- New applications of comprehensive geriatric assessement
- Summary and recommendations

Hip fractures in adults

- Initial management
- Fracture classification
- Summary and recommendations
- Nondisplaced femoral neck fracture (Pictures)
- Intertrochanteric hip fracture (Figures)

Medical consultation for patients with hip fracture

- Thromboembolic prophylaxis
- Osteoporosis
- Summary and recommendations

Overview of geriatric rehabilitation: Patient assessment and common indications for rehabilitation

- Hip fracture
- Summary and recommendations

Femoral stress fractures in adults

- Complications
- Tension (superolateral) side fracture
- Summary and recommendations

Imaging evaluation of the painful hip in adults

- Acute hip trauma
- Summary and recommendations

KnowledgeShare

What is KnowledgeShare?

Provides regular, targeted, personalised evidence updates to staff, based on their specific professional interests. Subject-specific bulletins can also be produced.

Targeted evidence updates

These are individualised, based on a staff member's interest in particular conditions or lifestyle factors, age groups, settings of care, interventions and management topics.

Collaboration and knowledge sharing

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Recent Database Articles related to Orthogeriatrics

Below is a selection of articles related to orthogeriatrics recently added to the healthcare databases, grouped in the following categories:

- **Medical**
- **Patient care and management**
- **Psychological**
- **Other**

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Medical

Isolated cardiac troponin rise does not modify the prognosis in elderly patients with hip fracture

Author(s): Vallet H.; Breining A.; Cohen-Bittan J.; Verny M.; Boddaert J.; Riou B.; Raux M.; Khiami F

Source: Medicine (United States); 2017; vol. 96 (no. 7)

Publication Type(s): Article

Abstract: Perioperative myocardial infarction remains a life-threatening complication in noncardiac surgery and even an isolated troponin rise (ITR) is associated with significant mortality. Our aim was to assess the prognostic value of ITR in elderly patients with hip fracture. In this cohort study, all patients admitted between 2009 and 2013 in our dedicated geriatric postoperative unit after hip fracture surgery with a cardiac troponin I determination were included and divided into Control, ITR, and acute coronary syndrome (ACS) groups. The primary end point was a composite criteria defined as 6-month mortality and/or re-hospitalization. Secondary end points included 30-day mortality, 6-month mortality, and 6-month functional outcome. Three hundred twelve patients were (age 85+/-7 years) divided into Control (n=217), ITR (n=50), and ACS (n=45) groups. There was no significant difference for any postoperative complications between ITR and Control groups. In contrast, atrial fibrillation, acute heart failure, hemorrhage, and ICU admission were significantly more frequent in the ACS group. Compared to the Control group, 6- month mortality and/or rehospitalization was not significantly modified in the ITR group (26% vs. 28%, P=0.84, 95% confidence interval [CI] of the difference -13%-14%), whereas it was increased in the ACS group (44% vs. 28%, P=0.02, 95% CI of the difference 2%-32%). ITR was not associated with a higher risk of new institutionalization or impaired walking ability at 6 months, in contrast to ACS group. In elderly patients with hip fracture, ITR was not associated with a significant increase in death and/or rehospitalization within 6 months.

Acetabular Fractures in the Elderly: Midterm Outcomes of Column Stabilisation and Primary Arthroplasty

Author(s): Ortega-Briones A.; Smith S.; Rickman M.

Source: BioMed Research International; 2017; vol. 2017

Publication Type(s): Article

Available in full text at BioMed Research International - from EBSCOhost

Abstract: Background. Interest in arthroplasty techniques for periarticular or intra-articular fractures in the elderly/osteoporotic patient continues to rise, including for geriatric acetabular fractures. In line with this, many acetabular fracture surgeons are now undertaking acute total hip arthroplasty in elderly/osteoporotic patients. Little is known however of the outcomes of this procedure, beyond the first year after surgery. Questions/Purposes. We determined the clinical outcomes of a series of elderly osteoporotic patients (mean age at surgery 77.4 years) treated for acetabular fractures with column fixation and simultaneous total hip arthroplasty, at a mean of 49 months after surgery. Methods. 24 patients (25 hips) were reviewed at a mean of 49 months after surgery. The surgical technique employed has previously been described. Radiographs were obtained, and clinical outcomes were assessed using Harris Hip Scores and the Merle d'Aubigne score. Results. 14 hips were available for assessment (9 deceased, 2 lost to follow-up). No patient suffered any complications beyond the perioperative period, no acetabular components were loose clinically or on latest radiographs, and the mean Harris Hip Score was 92. All but one patient scored good or excellent on the Merle d'Aubigne score. Conclusions. Column fixation and simultaneous total hip arthroplasty are a viable option for complex geriatric acetabular fractures, with encouraging midterm results. We conclude that THR is a viable long-term solution in this situation provided that the acetabular columns are stabilised prior to implantation, but more research is needed to aid in overall management decision making.

Interest of a medical surgical geriatric unit in a district hospital: a retrospective study.

Author(s): Gonnaud, Baptiste; Spiga, Radia; Hamache, Selim; Ramboa, Patricia; Momplot, Corinne

Source: Geriatrie et psychologie neuropsychiatrie du vieillissement; Sep 2017; vol. 15 (no. 3); p. 231-241

Publication Type(s): Journal Article

Abstract:BACKGROUNDOrthogeriatric units have shown through several studies their effectiveness on reducing the morbidity and mortality after hip fracture. What about other emergency surgeries at the elderly? We evaluated the results of a small medical surgical geriatric unit (UMCG) for all the not sheduled surgeries.METHODSA retrospective sudy has been done, analyzing management of patients over 75 years after an emergency surgery, between 1st January 2013 and 15 February 2014 for the surgical unit, and between 15 February 2014 and 15 April 2014 for the UMCG. 3-month mortality, 6-month mortality and the main early complications were compared between the two groups, by a multivariated analysis fitting on the data on patient characteristics.RESULTS3-month mortality was significantly lower in the UMCG group (odds ratio 0.07 [95%IC: 0.004-0.48]; p=0.02), while the patients in this unit were more likely with dementia, with fall antecedent and with more comorbidity. 6-month mortality as well was lower in the UMCG group (0.10 [0.02-0.36]; p=0.001).CONCLUSIONManagement of not sheduled surgeries at the elderly in specific surgical geriatric unit is associated in a statistically significant reduction of 3-month mortality and 6-month mortality.

Locking intramedullary nails versus locking plates for the treatment of proximal humerus fractures.

Author(s): Gracitelli, Mauro E C; Malavolta, Eduardo A; Assunção, Jorge H; Ferreira Neto, Arnaldo A

Source: Expert review of medical devices; Sep 2017; vol. 14 (no. 9); p. 733-739

Publication Type(s): Journal Article

Abstract:INTRODUCTIONProximal humerus fractures (PHF) are common fractures and are the third most common type of fractures among older adults. The most commonly used implants include the locking plate and the locking intramedullary nail. Areas covered: The aim of this study is to perform a literature review of biomechanical and clinical studies that compare the locking plate and intramedullary nail for PHF osteosynthesis. Expert commentary: Twelve clinical studies and seven biomechanical studies were identified that met this criterion. The findings of this review showed that intramedullary nailing and locking plate fixation yielded similar functional results, but with contrasting complication rates. The biomechanical studies showed controversial results, with most of the studies demonstrating better biomechanical properties for the intramedullary nail. Different types of intramedullary nail for PHF have different characteristics, with curvilinear nails presenting a higher risk of complications.

Prevalence of Vertebral Compression Fractures on Routine CT Scans According to L1 Trabecular Attenuation: Determining Relevant Thresholds for Opportunistic Osteoporosis Screening.

Author(s): Graffy, Peter M; Lee, Scott J; Ziemlewicz, Timothy J; Pickhardt, Perry J

Source: AJR. American journal of roentgenology; Sep 2017; vol. 209 (no. 3); p. 491-496

Publication Type(s): Journal Article

Abstract:OBJECTIVERadiologists interpreting body CT scans may be the first to identify osteoporosis and associated vertebral fractures. This study correlates L1 trabecular attenuation measurements with prevalent vertebral body fractures in older adults undergoing routine CT.MATERIALS AND METHODSMean L1 trabecular attenuation was measured at thoracoabdominal CT in 1966 consecutive adults (983 men and 983 women) 65 years and older (mean age, 74.1 ± 6.6 [SD] years). Sagittal reconstructions and lateral scouts were analyzed for moderate or severe thoracolumbar vertebral compression fractures according to the Genant semiquantitative assessment method. The diagnostic performance of L1 attenuation for the evaluation of prevalent vertebral fractures was assessed, including ROC curve analysis.RESULTSA total of 162 (8.2%) individuals (mean age, 78.3 years; 66 men, 96 women) had at least one moderate or severe vertebral fracture. The mean L1 attenuation was 70.2 HU among patients with a prevalent fracture, whereas it was 132.3 HU among patients without fracture ($p < 0.001$). The prevalence of moderate or severe vertebral compression fractures was 32.5% when L1 attenuation was ≤ 90 HU. Prevalence increased to 49.2% with L1 attenuation of ≤ 50 HU. ROC curve analysis determined an optimal threshold of 90 HU (sensitivity = 86.9%, specificity = 83.9%), with a corresponding AUC of 0.895. The odds ratio of having a moderate or severe vertebral compression fracture was 31.9 for L1 attenuation ≤ 90 HU (95% CI, 20.2-50.5; $p < 0.001$).CONCLUSIONPatients with moderate or severe vertebral compression fractures have significantly lower L1 attenuation values than patients who do not. L1 attenuation ≤ 90 HU may represent an optimal threshold for determining risk for osteoporotic vertebral fractures.

Opportunistic Screening for Osteoporosis Using Body CT Scans Obtained for Other Indications: the UW Experience

Author(s): Lee S.J.; Pickhardt P.J.

Source: Clinical Reviews in Bone and Mineral Metabolism; Sep 2017; vol. 15 (no. 3); p. 128-137

Publication Type(s): Review

Abstract: Low bone mineral density (osteoporosis and osteopenia) leading to fragility fractures is associated with significant morbidity and mortality in our aging population. This condition is grossly underdiagnosed due to both insufficient screening and its silent nature prior to complicating fragility fractures. Body CT scans are commonly obtained among older adults for a wide variety of indications and contain rich data regarding bone health that are often ignored. At the University of Wisconsin, we have sought to harness this CT information for "opportunistic" osteoporosis screening. In this

article, we review the various CT-based approaches we have taken to date, including routine assessment of the spine for both vertebral fractures and trabecular density, as well as assessment of the hip, deriving femoral neck T-scores that are essentially equivalent to dual-energy x-ray absorptiometry (DXA). Future directions of research and clinical implementation are also discussed.

Adverse effects of proton-pump inhibitor use in older adults: a review of the evidence

Author(s): Maes M.L.; Fixen D.R.; Linnebur S.A.

Source: Therapeutic Advances in Drug Safety; Sep 2017; vol. 8 (no. 9); p. 273-297

Publication Type(s): Review

Abstract: Proton-pump inhibitors (PPIs) are a widely prescribed class of medications used to treat acid-related disorders and use has significantly increased over the last few decades. PPIs are often inappropriately prescribed and since they have been on the market, a number of post-marketing studies have been published demonstrating associations between longer duration of PPI therapy and a number of adverse effects that are a concern in older adults. The objective of this review is to discuss the existing literature of potential adverse effects with long-term PPI use in older adults and to summarize the implications in clinical practice. A PubMed search was conducted to identify studies evaluating the potential long-term adverse effects of PPI therapy in older adults, and publications were selected based on relevant criteria. PPIs have been associated with an increased risk of a number of adverse effects including osteoporotic-related fractures, Clostridium difficile infection, community-acquired pneumonia, vitamin B12 deficiency, kidney disease, and dementia, demonstrated by a number of case-control, cohort studies, and meta-analyses. Older adults should be periodically evaluated for the need for continued use of PPI therapy given the number of potential adverse effects associated with long-term use.

Risk factors for adverse outcomes in older adults with blunt chest trauma: A systematic review.

Author(s): Sawa, Jake; Green, Robert S; Thoma, Brent; Erdogan, Mete; Davis, Philip J

Source: CJEM; Aug 2017 ; p. 1-9

Publication Type(s): Journal Article

Abstract:OBJECTIVESThe objective of this study was to systematically review the published literature for risk factors associated with adverse outcomes in older adults sustaining blunt chest trauma.METHODSEMBASE and MEDLINE were searched from inception until March 2017 for prognostic factors associated with adverse outcomes in older adults sustaining blunt chest trauma using a pre-specified search strategy. References were independently screened for inclusion by two reviewers. Study quality was assessed using the Quality in Prognostic Studies tool. Where appropriate, descriptive statistics were used to evaluate study characteristics and predictors of adverse outcomes.RESULTSThirteen cohort studies representing 79,313 patients satisfied our selection criteria. Overall, 26 prognostic factors were examined across studies and were reported for morbidity (8 studies), length of stay (7 studies), mortality (6 studies), and loss of independence (1 study). No studies examined patient quality of life or emergency department recidivism. Prognostic factors associated with morbidity and mortality included age, number of rib fractures, and injury severity score. Although age and rib fractures were found to be associated with adverse outcomes in more than 3 studies, meta-analysis was not performed due to heterogeneity amongst included studies in how these variables were measured.CONCLUSIONSWhile blunt chest wall trauma in older adults is relatively common, the literature on prognostic factors for adverse outcomes in this patient population remains inadequate due to a paucity of high quality studies and lack of consistent reporting standards.

The impact of pre-existing conditions on functional outcome and mortality in geriatric hip fracture patients.

Author(s): Bliemel, Christopher; Buecking, Benjamin; Oberkircher, Ludwig; Knobe, Matthias;

Source: International orthopaedics; Aug 2017

Publication Type(s): Journal Article

Abstract:PURPOSEDue to pre-existing illnesses, elderly hip fracture patients represent a vulnerable patient population. The present study was conducted to investigate the effects of various pre-existing conditions on the outcomes of hip fracture patients.METHODSA total of 402 surgically treated geriatric hip fracture patients were included in this prospective, single-centre study. Upon admission, patient age, gender and fracture type were documented, among other information. Patients were divided into six groups according to their pre-existing illness (neurological, cardiovascular, respiratory, gastrointestinal, renal or musculoskeletal). Outcomes in all six patient groups were measured using the following outcome parameters: length of hospital stay, mobility, functional results and mortality rate at discharge and at the one-year follow-up examination.RESULTSReduced values for the pre-fracture Barthel index (BI) were detected in patients with neurological ($p < 0.001$) and kidney-related diseases ($p = 0.001$). Neurological and kidney-related diseases were associated with reduced values on the BI ($p < 0.001$; $p = 0.002$) and Tinetti test (TT) ($p < 0.001$; $p = 0.004$) as well as an increased mortality rate ($p < 0.001$; $p < 0.001$) at the one-year follow-up. In addition, patients with respiratory ($p = 0.004$) and gastrointestinal disorders ($p = 0.007$) had an increased mortality rate in the medium term.CONCLUSIONSPre-existing conditions are common among geriatric hip fracture patients. Pre-existing neurological and kidney-related diseases had the highest impact on functional outcomes and mortality rates at the end of acute care and in the medium term. In contrast to pre-existing cardiovascular disease, pre-existing neurological, kidney, respiratory and gastrointestinal disorders were also found to be associated with increased mortality rates in the medium term.

Potentially Inappropriate Medications and the Time to Full Functional Recovery After Hip Fracture.

Author(s): Iaboni, Andrea; Rawson, Kerri; Burkett, Craig; Lenze, Eric J; Flint, Alastair J

Source: Drugs & aging; Aug 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDOlder adults after hip fracture are at increased risk of being prescribed potentially inappropriate medications, and may be particularly vulnerable to their adverse effects.OBJECTIVEThe objective of this study was to examine the association of potentially inappropriate medication use with the time to full functional recovery within 1 year of hip fracture repair.METHODSWe conducted a secondary analysis of a prospective longitudinal study of eight hospitals in St. Louis, MO, USA. The participants were older adults (n = 477) aged 60 years or older who had undergone surgical repair of a hip fracture free of delirium, dementia or depression at baseline. Drugs at baseline were categorised using the American Geriatrics Society 2012 Beers criteria. The outcome was the Functional Recovery Scale total score measured at four time points during a 12-month period of observation. Cox proportional hazards models examined the time to 95% recovery of function ('full recovery'), adjusting for demographics, cognition, depression, medical co-morbidity, pre-fracture functioning and pain as covariates.RESULTSPotentially inappropriate medication use was common following hip fracture, with 51% of participants prescribed at least one potentially inappropriate medication and 17.4% prescribed two or more potentially inappropriate medications. Potentially inappropriate medication use was significantly associated with a longer time to achieve full recovery with a hazard ratio of 0.69 (95% confidence interval 0.52-0.92; $p = 0.012$) and this association was stronger for two or more potentially inappropriate medications compared with one potentially inappropriate medication (hazard ratio = 0.60; 95% confidence

interval 0.40-0.90; p = 0.014).CONCLUSIONPotentially inappropriate medication use was associated with a longer time to full functional recovery in older adults who underwent surgery for a hip fracture, particularly in those using two or more potentially inappropriate medications at baseline.

Mortality, Geriatric, and Nongeriatric Surgical Risk Factors Among the Eldest Old: A Prospective Observational Study.

Author(s): Pelavski, Andres D; De Miguel, Marcos; Alcaraz Garcia-Tejedor, Gabriela; Villarino, Laura

Source: Anesthesia and analgesia; Aug 2017

Publication Type(s): Journal Article

Available in full text at Anesthesia and Analgesia - from Ovid

Abstract:BACKGROUNDPreoperative risk and postoperative outcomes among the elderly are the subject of extensive debate. However, the eldest old, that is, the fastest-growing and most vulnerable group, are insufficiently studied; even their mortality rate is unclear. This prospective observational study was performed with the aim of determining the mortality rate of this population and establishing which preoperative conditions were predictors of which postoperative outcomes. The study was undertaken between 2011 and 2015 in a major tertiary care university hospital.METHODSAll patients aged ≥85 years undergoing any elective procedure during the study period were included. Patients were followed up for 30 days postoperatively. The preoperative conditions studied were demographic data, grade of surgical complexity (1-3), preoperative comorbidities, and some characteristically geriatric conditions (functional reserve, nutrition, cognitive status, polypharmacy, dependency, and frailty). The outcome measures were 30-day all-cause mortality (primary end point), morbidity, prolonged length of stay, and escalation of care in living conditions.RESULTSOf 139 eligible patients, 127 completed follow-up. The 30-day mortality was 7.9%; 95% confidence interval (CI), 3.2-12.6. It had 3 predictors: malnutrition (odds ratio [OR], 15; 95% CI, 3-89), complexity 3 (OR, 9.1; CI, 2-52), and osteoporosis/osteoporotic fractures (OR, 14.7; CI, 2-126). Significant predictors for morbidity (40%) were ischemic heart disease (OR, 3.9; CI, 1-11) and complexity 3 (OR, 3.6; CI, 2-9), while a nonfrail phenotype (OR, 0.3; CI, 0.1-0.8) was found to be protective. Only 2 factors were found to be predictive of longer admissions, namely complexity 3 (OR, 4.4; CI, 2-10) and frailty (OR, 2.7; CI, 2-7). Finally, risk factors for escalation of care in living conditions were slow gait (a surrogate for frailty, OR, 2.5; CI, 1-6), complexity 3 (OR, 3.2; CI, 1-7), and hypertension (OR, 2.9; CI, 1-9).CONCLUSIONSThe eldest old is a distinct group with a considerable mortality rate and their own particular risk factors. Surgical complexity and certain geriatric variables (malnutrition and frailty), which are overlooked in American Society of Anesthesiologists and most other usual scores, are particularly relevant in this population. Inclusion of these factors along with appropriate comorbidities for risk stratification should guide better decision making for families and doctors alike and encourage preoperative optimization of patients.

Prevalence and determinants of frailty and associated comorbidities among older Gurkha welfare pensioners in Nepal.

Author(s): Devkota, Sirjana; Anderson, Bruce; Soiza, Roy L; Myint, Phyo K

Source: Geriatrics & gerontology international; Aug 2017

Publication Type(s): Journal Article

Abstract:AIMPopulation aging is increasing in low-income countries. Despite this, there is distinct lack of knowledge about the prevalence of comorbidities and determinants of frailty among older people in these countries.METHODSWe examined data from "Health and Social Care Needs Assessment Survey of the Gurkha Welfare Pensioners" carried out in 2014. Participants were aged ≥60 years from the Gorakha, Lamjung and Tanahu districts of Nepal. Face-to-face interviews were carried out using validated questionnaires. Demographic data, socioeconomic status, and self-

reported symptoms and illnesses were collected. Frailty was assessed using the Canadian Study of Health and Aging scale. Univariable and multivariable regression models were constructed to identify the determinants of frailty defined as Canadian Study of Health and Aging scale ≥4.RESULTSA total of 253 participants (32.0% men) were included in the present study. Most (82.2%) participants were from the Janajati ethnic background. Men who were ex-servicemen had higher educational attainment than women, most of whom (95.3%) were widows of ex-servicemen ($P < 0.01$). A total of 48.5% of women lived with their sons, whereas 43% of the male participants lived with their wives. Women reported a higher prevalence of mental health issues, such as anxiety and insomnia, compared with men. The prevalence of frailty was 46.2% (46.3% in men and 46.1% in women). In this population, frailty was significantly associated with older age, smoking, living with son, breathing problems, unspecified pain and fatigue, poor dental health, and history of falls and fracture ($P < 0.001$ for all) after controlling for potential confounders.CONCLUSIONSThe present study highlights the growing nature of the comorbidity burden, and frailty and its determinants in a low-income setting. Concerted efforts should be made with regard to how best to tackle this globally. Geriatr Gerontol Int 2017;

Frailty as a Predictor of Future Fracture in Older Adults: A Systematic Review and Meta-Analysis.

Author(s): Chen, Kuo-Wei; Chang, Shu-Fang; Lin, Pei-Ling

Source: Worldviews on evidence-based nursing; Aug 2017; vol. 14 (no. 4); p. 282-293

Publication Type(s): Meta-analysis Journal Article

Abstract:BACKGROUNDStudies have identified frailty as an effective predictor of fracture; however, the correlation between frailty and fracture differs between various stages of frailty.OBJECTIVESThe main aim is to determine the correlation between various stages of frailty and fracture risk; a secondary purpose is to determine the correlation between subgroups (e.g., females, females with a hip fracture, or aged 65 years or older) within the stages of frailty and fracture risk. Finally, effect of frailty criteria on the association between stages of frailty and fracture risk was tested.METHODSWe conducted a systematic review and meta-analysis. The inclusion criteria were as follows: (a) a prospective study design; (b) subjects aged 55 years or older; (c) a division into robust, prefrail, and frail groups; and (d) reported confidence intervals of hazard ratio. Two investigators independently assessed quality and discussed their findings to reach consensus. The quality of the literature was assessed and the level of evidence was also determined.RESULTSIn total, five studies included 103,783 older people and recorded 2,960 fractures. The results identified that the risk of fracture in the frail people was higher than that in both the robust people (summary HR: 1.67; 95% CI [1.46-1.91]) and prefrail people (summary HR: 1.28; 95% CI [1.16-1.40], and that the risk of fracture in the prefrail people was higher than that in the robust people (summary HR: 1.30; 95% CI [1.20-1.41]). A subgroup analysis revealed that among female adults, older females with hip fracture, or those aged 65 years or more, those who were categorized as frail showed the highest fracture risk, followed by those who were categorized as prefrail.LINKING EVIDENCE TO ACTIONProfessional nurses caring for frail or prefrail people should actively develop fracture prevention measures to reduce the risk of death caused by fractures.

Blood Pressure, Antihypertensive Polypharmacy, Frailty, and Risk for Serious Fall Injuries Among Older Treated Adults With Hypertension.

Author(s): Bromfield, Samantha G; Ngameni, Cedric-Anthony; Colantonio, Lisandro D;

Source: Hypertension (Dallas, Tex. : 1979); Aug 2017; vol. 70 (no. 2); p. 259-266

Publication Type(s): Journal Article

Available in full text at Hypertension - from Highwire Press

Abstract: Antihypertensive medication and low systolic blood pressure (BP) and diastolic BP have been associated with an increased falls risk in some studies. Many older adults have indicators of frailty, which may increase their risk for falls. We contrasted the association of systolic BP, diastolic BP, number of antihypertensive medication classes taken, and indicators of frailty with risk for serious fall injuries among 5236 REGARDS study (Reasons for Geographic and Racial Difference in Stroke) participants ≥65 years taking antihypertensive medication at baseline with Medicare fee-for-service coverage. Systolic BP and diastolic BP were measured, and antihypertensive medication classes being taken assessed through a pill bottle review during a study visit. Indicators of frailty included low body mass index, cognitive impairment, depressive symptoms, exhaustion, impaired mobility, and history of falls. Serious fall injuries were defined as fall-related fractures, brain injuries, or joint dislocations using Medicare claims through December 31, 2014. Over a median of 6.4 years, 802 (15.3%) participants had a serious fall injury. The multivariable-adjusted hazard ratio for a serious fall injury among participants with 1, 2, or ≥3 indicators of frailty versus no frailty indicators was 1.18 (95% confidence interval, 0.99-1.40), 1.49 (95% confidence interval, 1.19-1.87), and 2.04 (95% confidence interval, 1.56-2.67), respectively. Systolic BP, diastolic BP, and number of antihypertensive medication classes being taken at baseline were not associated with risk for serious fall injuries after multivariable adjustment. In conclusion, indicators of frailty, but not BP or number of antihypertensive medication classes, were associated with increased risk for serious fall injuries among older adults taking antihypertensive medication.

Early surgery for Hong Kong Chinese elderly patients with hip fracture reduces short-term and long-term mortality.

Author(s): Liu, S Kk; Ho, A Wh; Wong, S H

Source: Hong Kong medical journal = Xianggang yi xue za zhi; Aug 2017; vol. 23 (no. 4); p. 374-380

Publication Type(s): Journal Article

Abstract:INTRODUCTIONStudies have shown that early surgery reduces hospital and 1-year mortality in elderly patients with hip fracture, but no major study has examined such relationship in Hong Kong. This study aimed to explore the relationship of early surgery and mortality in a Chinese elderly population with hip fracture.METHODSThis observational study included patients attending public hospitals in Hong Kong. All patients who underwent surgery for geriatric hip fracture in public hospitals from January 2000 to December 2011 were studied. Data were retrieved and collected from the Clinical Data Analysis and Reporting System of the Hospital Authority. Patients were divided into three groups according to timing of surgery: early (0-2 days after admission), delayed (3-4 days after admission), and late (≥5 days after admission) groups. Based on the date of death, we analysed 30-day and 1-year mortality, regardless of cause of death. Comparison of mortality rates was also made between the period before and after implementation of Key Performance Indicator formulated by the Hospital Authority.RESULTSThe overall 1-year mortality rate was 16.8%. The relative risks of 1-year mortality were 1.21 and 1.52 when the delayed and late groups were compared with the early group, respectively. The hazard ratios of long-term mortality were 1.16 (95% confidence interval, 1.13-1.20) and 1.37 (1.33-1.41), respectively for the same comparison.CONCLUSIONPrevalence of geriatric hip fracture will continue to rise and further increase the burden on our health care system. After implementation of Key Performance Indicator, most elderly patients with hip fracture underwent surgery within 2 days provided they were medically fit. Early surgery can reduce both short-term and long-term mortality. Setting up a fragility fracture registry would be beneficial for further studies.

Electrolytes: Calcium Disorders.

Author(s): Barstow, Craig

Source: FP essentials; Aug 2017; vol. 459 ; p. 29-34

Publication Type(s): Journal Article

Abstract:A normal serum calcium level is 8 to 10 mg/dL. The diagnosis of hypercalcemia (ie, levels 10.5 mg/dL or greater) should be confirmed with an albumin-adjusted or ionized calcium level. The two most common causes of hypercalcemia are hyperparathyroidism and malignancy. Drugs, notably lithium and thiazide diuretics, also can cause hypercalcemia. Patients with severe or symptomatic hypercalcemia should be treated initially with hydration to decrease calcium levels. The evaluation should include a parathyroid hormone (PTH) level. If the PTH level is low, cancer is a likely cause, particularly multiple myeloma, breast cancer, or lymphoma. If the PTH level is normal or elevated, hyperparathyroidism is the likely cause. Symptomatic patients with hyperparathyroidism and patients with certain clinical markers should be considered for surgery. For patients with mild disease, monitoring is an option. Hypocalcemia often is caused by vitamin D deficiency. Symptomatic patients and patients with calcium levels less than 7.6 mg/dL should be treated with intravenous calcium gluconate; concomitant magnesium deficiency should be addressed. There is no evidence that routine calcium and vitamin D supplementation reduces the risk of fractures, but studies have shown that vitamin D supplementation does decrease the number of falls in older adults at risk.

Patterns of drug prescriptions in an orthogeriatric ward as compared to orthopaedic ward: results from the Trondheim Hip Fracture Trial-a randomised clinical trial.

Author(s): Heltne, Marianne; Saltvedt, Ingvild; Lydersen, Stian; Prestmo, Anders; Sletvold, Olav

Source: European journal of clinical pharmacology; Aug 2017; vol. 73 (no. 8); p. 937-947

Publication Type(s): Journal Article

Abstract:PURPOSEIn the Trondheim Hip Fracture Trial, 397 home-dwelling patients with hip fractures were randomised to comprehensive geriatric care (CGC) in a geriatric ward or traditional orthopaedic care (OC). Patients in the CGC group had significantly better mobility and function 4 months after discharge. This study explores group differences in drug prescribing and possible associations with the outcomes in the main study.METHODSDrugs prescribed at admission and discharge were registered from hospital records. Mobility, function, fear of falling and quality of life were assessed using specific rating scales. Linear regression was used to analyse association between drug changes and outcomes at 4 months.RESULTSThe mean age was 83 years, and 74% were females. The mean number (± SD) of drugs in the CGC and OC groups was 3.8 (2.8) and 3.9 (2.8) at inclusion and 7.1 (2.8) and 6.2 (3.0) at discharge, respectively ($p = 0.003$). The total number of withdrawals was 209 and 82 in the CGC and OC groups, respectively ($p < 0.0001$), and the number of starts was 844 and 526, respectively ($p < 0.0001$). A significant negative association was found between the number of drug changes during the hospital stay and mobility and function 4 months later in both groups. However, this association disappeared when adjusting for baseline function and comorbidities.CONCLUSIONThese secondary analyses suggest that there are significant differences in the pharmacological treatment between geriatric and orthopaedic wards, but these differences could not explain the beneficial effect of CGC in the Trondheim Hip Fracture Trial.

Rapid Geriatric Assessment of Hip Fracture.

Author(s): Zanker, Jesse; Duque, Gustavo

Source: Clinics in geriatric medicine; Aug 2017; vol. 33 (no. 3); p. 369-382

Publication Type(s): Journal Article Review

Abstract:A comprehensive geriatric assessment, combined with a battery of imaging and blood tests, should be able to identify those hip fracture patients who are at higher risk of short- and long-term complications. This comprehensive assessment should be followed by the implementation of a

comprehensive multidimensional care plan aimed to prevent negative outcomes in the postoperative period (short and long term), thus assuring a safe and prompt functional recovery while also preventing future falls and fractures.

Hip and knee arthroplasty are common among transthyretin cardiac amyloidosis patients and occur 7.6 years before cardiac amyloid diagnosis: Can we identify affected patients earlier?

Author(s): Rubin J.; Alvarez J.; Teruya S.; Castano A.; Lehman R.A.; Weidenbaum M.; Geller J.A.

Source: Journal of Cardiac Failure; Aug 2017; vol. 23 (no. 8)

Publication Type(s): Conference Abstract

Abstract: Introduction: Transthyretin cardiac amyloidosis (ATTR-CA) causes a restrictive cardiomyopathy affecting older adults, diagnosed at an average age of 75. Subjects are often diagnosed with advanced condition, when emerging therapies may not have clinical benefit. Therefore, an aim of this investigation is to detect clinical entities that may provide more advanced warning of ATTR-CA. Since ATTR preferentially deposits in ligaments, tendons, and articular cartilage, possibly in the hip more frequently than the knee, we hypothesized that ATTR-CA patients have a greater prevalence of total hip (THA) and knee (TKA) arthroplasties compared to the general population, and that arthroplasty would occur significantly before ATTR-CA diagnosis. Methods: We e x-amined the rates of THA and TKA in 156 ATTR-CA patients within our institutional database compared with published data in over 2.5 million patients. Results: Among 156 patients, the average age at ATTR-CA diagnosis was 75 +/- 8 years, consistent with previous studies. Twenty patients underwent at least one THA (12.8%, 95% CI = 7.5-18%; RR 3.9, 95% CI = 2.6-5.8), and 22 underwent at least one TKA (14.1%, 95% CI = 8.6-20%; RR 2.1, 95% CI = 1.4-3.1). Average age of first arthroplasty was 66 +/- 11 years, median age was 66, and age range was 41 to 87. On average for each patient, arthroplasty occurred 7.6 years before ATTR-CA was diagnosed. As shown in the table below, the rates of THA and TKA were significantly higher in ATTR-CA subjects than in age and gender matched control populations. The odds of having arthroplasty surgery in subjects ages 60-89 with ATTR-CA compared to controls was 4.3 for THA (95% CI 2.7-6.9) and 2.3 for TKA (95% CI 1.4-3.5). Conclusions: Patients with ATTR-CA undergo significantly more hip and knee arthroplasties compared to the general population. On average, these surgeries occur 7.6 years before a definitive diagnosis of ATTR-CA is made, at an average age of 66. Testing of orthopedic specimens for ATTR amyloid or cardiac evaluation for ATTR-CA at the time of arthroplasty may result in identification of affected individuals earlier in the course of their disease.

Incidence of bone protection and associated fragility injuries in patients with proximal femur fractures.

Author(s): Aguado-Maestro, I; Panteli, M; García-Alonso, M; Bañuelos-Díaz, A; Giannoudis, P V

Source: Injury; Aug 2017

Publication Type(s): Journal Article

Abstract:OBJECTIVESOur aim was to investigate whether patients presenting with fragility fractures of the proximal femur are receiving osteoporosis treatment and to assess the number of other fragility fractures they have sustained prior to admission.METHODSAll patients presenting to our institution with fragility fractures of the proximal femur within an 18-month period (January 2012-August 2013) were included. Patient demographics; fracture classification (AO/OTA); American Society of Anesthesiologists (ASA) grade; Abbreviated Mental Test Score (AMTS) on admission; type of operation; time to operation; peri-operative complications; length of hospital stay (LOS); walking status; osteoporotic medication; Dual-energy X-ray absorptiometry (DEXA) results; additional fragility fractures; and mortality were collected and analysed.RESULTSA total of 1004 patients (278 male) met the inclusion criteria and were included into the study. The mean age was 82.01 years and

mean LOS was 19.54days. Fifty-four per cent of the patients were admitted from their own homes whereas 43% were capable to walk indoors without any aids before their injury. Mean time to surgery was 2.06days (Median: 1.31, range: 0-26days). Three hundred and six patients (30.5%) had at least another fragility fracture before the index episode (mean 1.40 fractures; SD: 0.71 fractures; range: 1-6 fractures). Only 16.4% were under complete osteoporosis treatment on admission, defined as receiving calcium with vitamin D and a bisphosphonate or an alternative agent. When we compared patients without a history of a previous fragility fracture (Group A) and patients with at least another previous fragility fracture (Group B), we found that patients in Group B had a significantly lower AMTS score, lower bone mineral density (BMD) as evident on the DEXA scan, an inferior mobility before admission and a higher incidence of extracapsular fractures ($p<0.05$). On discharge, patients in Group B had a higher chance of receiving complete bone protection compared to group A (27.9% versus 41.7%; $p<0.01$). Following discharge, 11.2% of the patients sustained an additional fragility fracture. The mean time from the index episode to the additional fracture was 0.65 years, whilst these injuries were more frequent in Group B (RR=1.638; $p<0.05$).CONCLUSIONPatients presenting with a hip fracture are generally under-treated for osteoporosis. Post-operative assessment by a designated geriatrician and use of a standardised protocol is of paramount importance for reducing the risk of additional fragility fractures. Additionally, screening of the elderly population for identifying the patients who suffer from osteoporosis can potentially reduce the risk of sustaining a further fragility fracture.

Hyponatremia, Bone Mineral Density and Falls in the Elderly; results from AHAP study.

Author(s): Hosseini, Seyed Reza; Baghitabar, Naghi; Mirzapour, Ali; Oliaei, Farshid;

Source: Romanian journal of internal medicine = Revue roumaine de medecine interne; Aug 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDHyponatremia (HN) can be associated with osteoporosis, falls and bone fractures in the elderly. Recent researches demonstrated different results about the correlation of HN with bone mineral density and bone fractures.METHODSThis analytic research came from the AHAP project in northern IRAN. All people aged 60 years and over were included in the study. Individuals with severe comorbidities and them who had concurrent conditions which could have impact on bone mineral densities (BMD) such as long-term use of steroids, calcium and/or vitamin D supplements, bisphosphonates, calcitonin, thiazides and hormonal medications were excluded.RESULTSOne thousand and one hundred and thirteen older persons were entered in the study. More than 10 percent of the participants had HN (serum Na+ level ≤ 137mEq/L). No significant difference has been observed between hyponatremic and nonhyponatremic individuals about their balance abilities; bone mineral density; incidence of falls and/or bone fracture during the previous 6 month; dependency in activities of daily living; and osteoporosis.CONCLUSIONHN was not a prevalent problem in older adults who met the inclusion criteria of this research. No significant difference has been observed between HN and bone mineral density and falls in the elderly.

Patient care and management

Pre-discharge rehabilitation after hip surgery reduces 30-day readmissions in older adults: National Health Insurance Service-Senior Cohort (2007-2012)

Author(s): Bu N.; Kim B.S.; Choi H.; Kim S.; Won C.W.

Source: European Geriatric Medicine; 2017

Publication Type(s): Article In Press

Abstract: Background: Rehabilitation programs before and after hip surgery can shorten the length of hospital stay, reduce the incidence of complications, and reduce the readmission rate after surgery in older adults aged 65. years or over. The present study aimed to investigate the status of readmissions within 30. days after discharge and related factors in elderly people through the big data analysis using the sample data from the National Health Insurance Service-Senior Cohort (NHIS-SC). Method: The subjects of the present study were patients aged 65. years or older who underwent hip surgery between 2007 and 2012. The subjects undergoing hip surgery included those who underwent at least one surgery of the following during the period: replacement arthroplasty, revision arthroplasty, arthrodesis, internal fixation, reduction of fractured extremity and internal fixation. Each variable was selected for sociodemographic characteristics and clinical features of the subjects, and the characteristics of medical institutions according to 30-day readmission. Results: Among 9008 study participants, 1628 (18.1%) were readmitted within 30. days. Lower readmission rate was associated with longer hospital stay, greater number of hospital beds, and rehabilitation before discharge; whereas a higher rate was associated with provincially located hospitals, getting of medical aid, accompanying fractures, ICU admission, and comorbidities. Conclusions: Pre-discharge rehabilitation in patients aged >=. 65. years who underwent hip surgery can reduce readmissions, and efforts to increase daily living functions such as muscle strength and walking ability are very important.Copyright © 2017.

Association of comprehensive geriatric assessment with quality-related care practices during implementation and development of an orthogeriatric hip fracture program

Author(s): Pajulammi H.M.; Nuotio M.S.; Pihlajamaki H.K.; Jousmaki J.J.; Luukkaala T.H.

Source: European Geriatric Medicine; 2017

Publication Type(s): Article In Press

Abstract: Introduction: This study was performed to examine the association of a comprehensive geriatric assessment (CGA) with quality-related care practices during the implementation and development of an orthogeriatric hip fracture program. Materials and methods: Population-based, prospective data were collected on 1644 consecutive hip fracture patients aged. >=. 65 years between September 2007 and December 2015. The outcome variables were delay from admission to surgery. Copyright © 2017.

Clinical practice guidelines decrease unnecessary echocardiograms before hip fracture surgery

Author(s): Adair C.; Swart E.; Seymour R.; Patt J.; Karunakar M.A.

Source: Journal of Bone and Joint Surgery - American Volume; 2017; vol. 99 (no. 8); p. 676-680

Publication Type(s): Review

Available in full text at Journal of Bone and Joint Surgery - American Volume - from Ovid

Abstract: Background: Preoperative assessment of geriatric patients with a hip fracture may include transthoracic echocardiography (TTE), which increases resource utilization and cost and may delay surgery. The purpose of this study was to evaluate preoperative TTE utilization at a single institution in order to determine (1) how often TTE is ordered in accordance with clinical practice guidelines (CPGs), (2) how frequently TTE reveals cardiac disease that may alter medical or anesthesia management, and (3) whether following CPGs reduces unnecessary TTE utilization without potentially missing important disease. Methods: A retrospective review of data on 100 geriatric patients with a hip fracture who had undergone preoperative TTE was performed. Charts were reviewed to evaluate if TTE had been obtained in accordance with the published CPGs from the American College of Cardiology/American Heart Association (ACC/AHA). TTE reports were reviewed for the presence of disease that was important enough to cause modifications in anesthesia or perioperative management, including new left ventricular systolic or diastolic dysfunction, moderate

or severe valvular disease, and pulmonary hypertension. Finally, the sensitivity and specificity of accordance with the ACC/AHA CPGs for predicting which patients would have TTE that identified important disease were calculated. Results: The TTE was ordered in accordance with the published ACC/AHA CPGs for 66% of the patients. TTE revealed disease with the potential to modify anesthesia or medical management in 14% of the patients-for all of whom the TTE had been indicated according to ACC/AHA guidelines (i.e., the guidelines were 100% sensitive). In this study population, following the ACC/AHA guidelines could have prevented the performance of TTE in 34% of the patients without missing any disease (40% specificity). Conclusions: Preoperative TTE for patients with a hip fracture is frequently obtained outside the recommendations of established CPGs. Utilization of CPGs such as the ACC/AHA guidelines should be considered, as it may decrease variability in care and reduce unnecessary resource utilization without adversely affecting patient outcomes.

Geriatric fracture care: Future trajectories: A 2015 AOA critical issues symposium

Author(s): Switzer J.A.; Bozic K.J.; Kates S.L.

Source: Journal of Bone and Joint Surgery - American Volume; 2017; vol. 99 (no. 8)

Publication Type(s): Conference Paper

Available in full text at Journal of Bone and Joint Surgery - American Volume - from Ovid

Abstract: The population of the United States and the world is aging rapidly. Musculoskeletal care for older adults will be impacted by the manner in which health care is financed and the ability of the orthopaedic community to provide evidence-based integrated care for this population. We review the financial aspects of health-care reform and the implications for musculoskeletal care in the elderly. We discuss the establishment of quality measures for hip fracture care in the elderly, team building to accomplish this, and an innovative program designed to provide orthopaedic care to the frail elderly outside of the usual office setting.

C2 Fracture Subtypes, Incidence, and Treatment Allocation Change with Age: A Retrospective Cohort Study of 233 Consecutive Cases

Author(s): Robinson A.-L.; Robinson Y.; Olerud C.; Moller A.

Source: BioMed Research International; 2017; vol. 2017

Publication Type(s): Article

Available in full text at BioMed Research International - from EBSCOhost

Abstract: The currently available data on the distribution of C2 fracture subtypes is sparse. This study was designed to identify the proportions of the second cervical vertebra (C2) fracture subtypes and to present age and gender specific incidences of subgroups. A dataset of all patients treated between 2002 and 2014 for C2 fractures was extracted from the regional hospital information system. C2 fractures were classified into odontoid fractures types 1, 2, and 3, Hangman's fractures types 1, 2, and 3, and atypical C2 fractures. 233 patients (female 51%, age 72+/-19 years) were treated for a C2 fracture. Odontoid fractures were found in 183 patients, of which 2 were type 1, 127 type 2, and 54 type 3, while 26 of C2 fractures were Hangman's fractures and 24 were atypical C2 fractures. In the geriatric subgroup 89% of all C2 fractures were odontoid, of which 71% were type 2 and 29% type 3. There was an increasing incidence of odontoid fractures types 2 and 3 from 2002 to 2014. 40% of C2 fractures were treated surgically. This study presents reliable subset proportions of C2 fractures in a prospectively collected regional cohort. Knowledge of these proportions facilitates future epidemiological studies of C2 fractures.

Optimizing functional and biomechanical outcomes following total joint arthroplasty

Author(s): Pozzi, Federico

Source: Dissertation Abstracts International: Section B: The Sciences and Engineering; 2017; vol. 77 (no. 7)

Publication Type(s): Dissertation Abstract Dissertation

Abstract: Total joint arthroplasties are common and effective orthopeadic surgery. Patients often experience significant reduction of pain and improvement of perception of function after the surgery. However, patients continue to exhibit biomechanical abnormalities, functional limitations, decreased performance, and reduced activity level compared to older adults without joint pathology. The overall purpose of this dissertation was to identify optimal rehabilitation strategies to improve outcomes of patients following total joint arthroplasty surgery. A systematic review of randomized controlled trials was performed to understand optimal rehabilitation treatments for patients after total knee arthroplasty (TKA). Four categories of postoperative treatment strategies were discussed: 1) strengthening exercises; 2) aquatic therapy; 3) balance training; and 4) clinical environment. A secondary analysis of data from a randomized controlled trial was performed to understand the effectiveness of a progressive strengthening rehabilitation protocol to restore normal physical function after TKA. Data from a control group of older adults without knee pathology were used to build normality intervals for several outcome measures. The proportion of patients after TKA that met a normality cut-off was then compared between a group of patients who underwent progressive strengthening and standard of care rehabilitation. A longitudinal study was conducted to understand the recovery of patients in the first 12 months after total hip arthroplasty (THA). Recovery was evaluated using a comprehensive set of outcomes, including self-reported measures of function, impairment based, performance based, and biomechanical measures. Predictors of performance at 12 months were also evaluated to understand impairments associated with optimal recovery. The feasibility and preliminary effectiveness of a behavioral and exercise intervention for patients 3 to 9 months following THA was then evaluated. The intervention included meetings with a health coach to discuss healthy lifestyle habit, barriers to exercise, and strategies to stay engaged in physical activity. Additionally, patients took part in 18 supervised exercise sessions over the course of six weeks that included two aerobic and one strengthening component. Feasibility was evaluated in terms of session attendance and occurrence of adverse effects (i.e., joint pain, swelling, and tenderness) occurrence. Preliminary effectiveness was evaluated using a comprehensive set of outcomes, including self-reported measures of function and physical activities, impairment based, performance based, and biomechanical measures. The information obtained in this dissertation further support the importance of progressive strengthening and functional training following TKA. These exercises should be progressed as subjects meet clinical milestones to maintain appropriate intensity. A greater proportion of patients enrolled in a progressive strengthening rehabilitation protocol reached a level of physical function similar to healthy older adults. Therefore, this type of protocol may be more effective compared to standard rehabilitation protocols. The recovery of patients after THA is not optimal in terms of functional and biomechanical outcomes. Important weakness of hip abductor strength persisted 12 month after surgery. While biomechanical abnormality in the sagittal plane appear to resolve after surgery, excessive trunk lean and pelvis drop angle persist up to 12 months following the surgery. An aerobic and strengthening intervention is feasible and well tolerated in patients at least 3 months following THA. The intervention is effective in improving physical activity and may promote return to higher level of recreational and sport activities. Although hip abductor strength increased at the end of the intervention, weakness in the surgical… (PsycINFO Database Record (c) 2017 APA, all rights reserved)

Enhanced rehabilitation targeting strength and movement pattern symmetry following hip fracture

Author(s): Briggs, Robert Allan

Source: Dissertation Abstracts International: Section B: The Sciences and Engineering; 2017; vol. 77 (no. 7)

Publication Type(s): Dissertation Abstract Dissertation

Abstract: Asymmetries in movement and muscle function are ubiquitous and long lasting in those who survive after hip fracture. Enduring asymmetries in lower limb muscle function (i.e., strength and power) have been associated with fall frequency and impaired physical mobility among older adults. Lower limb discrepancies in vertical ground reaction forces (vGRFs) are evident during performance of mobility tasks, including ambulation and transfers from a seated to a standing position. Movement asymmetry during a sit-to-stand task (STST) made a small, independent contribution (r2 = 7%) to stair climb test performance when coupled with gait speed (r2 = 41%), balance confidence (r2 = 4%), and self-reported function (r2 = 4%); while STST asymmetry did not independently predict modified physical performance test score. To date, there is no specific rehabilitation strategy to restore movement pattern and muscle function symmetry after hip fracture. Thus, the potential impact of specific strategies to improve symmetry in vGRF variables during STST performance, and muscle function after hip fracture is unclear. We examined the feasibility and beneficence of High Intensity Task-Oriented strategies designed to improve Strength and Symmetry (HI-TOSS). We determined that asymmetries in strength, power, and vGRFs evident during STST, were each significantly reduced (i.e., improved) with training. Finally, improvements in muscle quality and its components with training after hip fracture have not been tested. We identify the surgical limb to be 10%-15% lower in muscle mass and muscle quality compared to the nonsurgical limb after discharge from usual care. Following HI-TOSS, muscle mass in the surgical limb improved by 9%, muscle strength improved by 21%, and muscle quality improved by 14%. Expectedly, physical performance improved significantly with training (~20% improvement); exceeding established clinically meaningful difference values. In summary, specific strategies to reduce asymmetries in movement and improve muscle function are well-tolerated in community-dwelling older adults after hip fracture and can yield improvements in STST and muscle function symmetry. Substantial improvements in STST performance, muscle function, muscle composition, and physical function are expected with HI-TOSS. Further studies should determine long-term effects and optimal HI-TOSS implementation practices in a restorative effort to enhance recovery after hip fracture. (PsycINFO Database Record (c) 2017 APA, all rights reserved)

Controversies in the Management of Geriatric Odontoid Fractures.

Author(s): Wagner, Scott C; Schroeder, Gregory D; Kepler, Christopher K; Schupper, Alexander J; Kandziora, Frank; Vialle, Emiliano N; Oner, Cumhur; Fehlings, Michael G; Vaccaro, Alexander R

Source: Journal of orthopaedic trauma; Sep 2017; vol. 31

Publication Date: Sep 2017

Publication Type(s): Journal Article

PubMedID: 28816875

Abstract: Fractures of the odontoid process of C2 have become increasingly prevalent in the aging population and are typically associated with a high incidence of morbidity. Dens fractures comprise the majority of all cervical fractures in patients older than 80 years and remain the most common cervical fracture pattern in all geriatric patients. Type II odontoid fractures have been associated with limited healing potential, and both nonoperative and operative management are associated with high mortality rates. Historically, there has been some debate in the literature with regards to optimal management strategies to maximize outcomes in geriatric patients. Recent, high-quality evidence has indicated that surgical treatment of type II odontoid fractures in elderly patients is associated with improvements in both short- and long-term mortality. Additionally, surgical

intervention has been shown to improve functional outcomes when compared with nonsurgical treatment. Factors to consider before surgery for geriatric type II odontoid fractures include associated comorbidities and the safety of general anesthesia administration. With appropriate measures of patient selection, surgery can provide an efficacious option for geriatric patients with type II odontoid fractures. We recommend surgical intervention via a posterior C1-C2 arthrodesis for geriatric type II odontoid fractures, provided that the surgery itself does not represent an unreasonable risk for mortality.

Disparities in Total Hip Arthroplasty Versus Hemiarthroplasty in the Management of Geriatric Femoral Neck Fractures.

Author(s): Dangelmajer, Sean; Yang, Arthur; Githens, Michael; Harris, Alex H S; Bishop, Julius A

Source: Geriatric orthopaedic surgery & rehabilitation; Sep 2017; vol. 8 (no. 3); p. 155-160

Publication Type(s): Journal Article

Abstract:INTRODUCTIONRecent clinical evidence suggests that total hip arthroplasty (THA) provides improved clinical outcomes as compared to hemiarthroplasty (HA) for displaced femoral neck fractures in elderly individuals. However, THA is still utilized relatively infrequently. Few studies have evaluated the factors affecting utilization and the role socioeconomics plays in THA versus HA.METHODSIn the United States, the National Inpatient Sample (NIS) database was used to identify patients treated surgically for femoral neck fracture, between 2009 and 2010. Patients were identified using International Classification of Diseases, Ninth Revision, codes for closed, transcervical femoral neck fractures and closed fractures at unspecified parts of the femoral neck. All candidate predictors of THA versus HA were entered into a multilevel mixed-effect regression model.RESULTSOlder patient age, being Asian or Pacific Islander, and having Medicaid payer status were all associated with lower odds of receiving THA. Patients with private insurance including Health Maintenance organization (HMO) had higher odds of THA as did patients with other insurance. Odds of THA were significantly lower among patients in teaching hospitals and higher at hospitals with greater THA volume.DISCUSSIONEthnicity, payer status, hospital size, and institutional THA volume were all associated with the utilization of THA versus HA in the treatment of geriatric femoral neck fractures.LEVEL OF EVIDENCELevel III Retrospective Cohort study.

Multimodal Pain Management in Older Elective Arthroplasty Patients.

Author(s): Brooks, Elaine; Freter, Susan H; Bowles, Susan K; Amirault, David

Source: Geriatric orthopaedic surgery & rehabilitation; Sep 2017; vol. 8 (no. 3); p. 151-154

Publication Type(s): Journal Article

Abstract:BACKGROUNDPain management after elective arthroplasty in older adults is complicated due to the risk of undertreatment of postoperative pain and potential adverse effects from analgesics, notably opioids. Using combinations of analgesics has been proposed as potentially beneficial to achieve pain control with lower opioid doses.OBJECTIVEWe compared a multimodal pain protocol with a traditional one, in older elective arthroplasty patients, measuring self-rated pain, incidence of postoperative delirium, quantity and cost of opioid analgesics consumed.METHODSOne hundred fifty-eight patients, 70 years and older, admitted to tertiary care for elective arthroplasty were prospectively assessed postoperative days 1-3. Patients received either traditional postoperative analgesia (acetaminophen plus opioids) or a multimodal pain protocol (acetaminophen, opioids, gabapentin, celecoxib), depending on surgeon preference. Self-rated pain, postoperative delirium, and time to achieve standby-assist ambulation were compared, as were total opioid doses and analgesic costs.RESULTSDespite receiving significantly more opioid analgesics (traditional: 166.4 mg morphine-equivalents; multimodal: 442 mg morphine equivalents; $t = 10.64$, $P < .0001$), there was no difference in self-rated pain, delirium, or mobility on postoperative

days 1-3. Costs were significantly higher in the multimodal group (t = 9.15, P < .0001). Knee arthroplasty was associated with higher pain scores than hip arthroplasty, with no significant difference in opioid usage.CONCLUSIONA multimodal approach to pain control demonstrated no benefit over traditional postoperative analgesia in elective arthroplasty patients, but with significantly higher amounts of opioid consumed. This poses a potential risk regarding tolerability in frail older adults and results in increased drug costs.

The Effects of an Online Theory-Based Bone Health Program for Older Adults

Author(s): Nahm E.-S.; Resnick B.; Brown C.; Zhu S.; Magaziner J.; Brown J.; Rietschel M.; An M.

Source: Journal of Applied Gerontology; Sep 2017; vol. 36 (no. 9); p. 1117-1144

Publication Type(s): Article

Abstract: An estimated 10 million Americans age 50 and older have osteoporosis, and many experience associated fractures. Although several interventions have been shown to be effective in preventing osteoporosis, their impact on bone health among older adults was limited. The aim of this study was, therefore, to examine the effects of a theory-based online bone health program (Bone Power program) for a large number of older adults. The 8-week program included learning modules, discussion boards, and other resources. Participants (N = 866; M age = 62.5 years) were recruited online and randomized into a Bone Power or control group. At the end of the intervention, the Bone Power group showed significantly greater improvement over the control group in osteoporosis knowledge, self-efficacy/outcome expectations for calcium intake and exercise, and calcium intake and exercise behaviors. This study's findings suggest that online health programs can be effective in improving older adults' knowledge, beliefs, and health behaviors.

Treatment Trends in Older Adults With Midshaft Clavicle Fractures.

Author(s): Pang, Eric Quan; Zhang, Steven; Harris, Alex H S; Kamal, Robin N

Source: The Journal of hand surgery; Aug 2017

Publication Type(s): Journal Article

Abstract:PURPOSEWe present a retrospective administrative claims database review examining the effect of recent literature supporting surgical clavicle fixation in a primarily young male population, on the treatment of midshaft clavicle fractures in patients older than 65 years. We tested the null hypothesis that there is no change in trends in surgical fixation of midshaft clavicle fractures in patients older than 65 years. Secondary analysis examined overall trends and trends based on sex.METHODSData from 2007 to 2012 were extracted using the Medicare Standard Analytic File and Humana administrative claim databases contained within the PearlDiver Patient Records Database. Patients with clavicle shaft fractures and their treatments were identified by International Classification of Disease, Ninth Revision, and Current Procedural Terminology codes. The primary response variable was the proportion of surgical to nonsurgical cases per year, and explanatory variables included age and sex. Data were analyzed using a trend in proportions test with significance set at P less than .05.RESULTSA total of 32,929 patients with clavicle shaft fractures were identified. During the study period, the proportion of clavicle shaft fractures treated surgically in patients older than 65 years (2.4%-4.6%) and younger than 65 years (11.2%-16.4%) showed a significant increasing trend. When analyzed by both sex and age, there was also an increasing trend in the proportion of surgically treated males in the older than 65 years (3.3%-6.2%) and the younger than 65 years groups (10.9%-19.5%). Lastly, there was an increase in the proportion of surgically treated females older than 65 years (1.7%-3.4%) and younger than 65 years (12.1%-14.3%).CONCLUSIONSOur analysis demonstrates an overall increase in the proportion of surgically treated clavicle shaft fractures, including in the male and female population older than 65 years. In

the setting of an aging population, future research evaluating possible benefits of surgical intervention in this population is needed prior to adopting this practice pattern.TYPE OF STUDY/LEVEL OF EVIDENCEII.

Developing a multidisciplinary rehabilitation package following hip fracture and testing in a randomised feasibility study: Fracture in the Elderly Multidisciplinary Rehabilitation (FEMuR).

Author(s): Williams, Nefyn H; Roberts, Jessica L; Din, Nafees Ud; Charles, Joanna M; Totton, Nicola

Source: Health technology assessment (Winchester, England); Aug 2017; vol. 21 (no. 44); p. 1-528

Publication Type(s): Journal Article

Abstract:BACKGROUNDProximal femoral fracture is a major health problem in old age, with annual UK health and social care costs of £2.3B. Rehabilitation has the potential to maximise functional recovery and maintain independent living, but evidence of clinical effectiveness and cost-effectiveness is lacking.OBJECTIVESTo develop an enhanced community-based rehabilitation package following surgical treatment for proximal femoral fracture and to assess acceptability and feasibility for a future definitive randomised controlled trial (RCT) and economic evaluation.DESIGNPhase I - realist review, survey and focus groups to develop the rehabilitation package. Phase II - parallel-group, randomised (using a dynamic adaptive algorithm) feasibility study with focus groups and an anonymised cohort study.SETTINGRecruitment was from orthopaedic wards of three acute hospitals in the Betsi Cadwaladr University Health Board, North Wales. The intervention was delivered in the community following hospital discharge.PARTICIPANTSOlder adults (aged ≥ 65 years) who had received surgical treatment for hip fracture, lived independently prior to fracture, had mental capacity (assessed by the clinical team) and received rehabilitation in the North Wales area.INTERVENTIONSParticipants received usual care (control) or usual care plus an enhanced rehabilitation package (intervention). Usual care was variable and consisted of multidisciplinary rehabilitation delivered by the acute hospital, community hospital and community services depending on need and availability. The intervention was designed to enhance rehabilitation by improving patients' self-efficacy and increasing the amount and quality of patients' practice of physical exercise and activities of daily living. It consisted of a patient-held information workbook, a goal-setting diary and six additional therapy sessions.MAIN OUTCOME MEASURESThe primary outcome measure was the Barthel Activities of Daily Living (BADL) index. The secondary outcome measures included the Nottingham Extended Activities of Daily Living (NEADL) scale, EuroQol-5 Dimensions, ICEpop CAPability measure for Older people, General Self-Efficacy Scale, Falls Efficacy Scale - International (FES-I), Self-Efficacy for Exercise scale, Hospital Anxiety and Depression Scale (HADS) and service use measures. Outcome measures were assessed at baseline and at 3-month follow-up by blinded researchers.RESULTSSixty-two participants were recruited (23% of those who were eligible), 61 were randomised (control, n = 32; intervention, n = 29) and 49 (79%) were followed up at 3 months. Compared with the cohort study, a younger, healthier subpopulation was recruited. There were minimal differences in most outcomes between the two groups, including the BADL index, with an adjusted mean difference of 0.5 (Cohen's d = 0.29). The intervention group showed a medium-sized improvement on the NEADL scale relative to the control group, with an adjusted mean difference between groups of 3.0 (Cohen's d = 0.63). There was a trend for greater improvement in FES-I and HADS in the intervention group, but with small effect sizes, with an adjusted mean difference of 4.2 (Cohen's d = 0.31) and 1.3 (Cohen's d = 0.20), respectively. The cost of delivering the intervention was £231 per patient. There was a possible small relative increase in quality-adjusted life-years in the intervention group. No serious adverse events relating to the intervention were reported.CONCLUSIONSTrial methods were feasible in terms of eligibility, recruitment and retention, although recruitment was challenging. The NEADL scale was more responsive than the BADL index, suggesting that the intervention could enable participants to regain better levels of independence compared with usual care. This should be tested in a definitive Phase III RCT. There were two main limitations of the study: the feasibility study lacked power to test for

differences between the groups and a ceiling effect was observed in the primary measure.TRIAL REGISTRATIONCurrent Controlled Trials ISRCTN22464643.FUNDINGThis project was funded by the National Institute for Health Research (NIHR) Health Technology Assessment programme and will be published in full in Health Technology Assessment; Vol. 21, No. 44. See the NIHR Journals Library for further project information.

Restoring: How older adults manage their recovery from hip fracture.

Author(s): Healee, David J; McCallin, Antoinette; Jones, Marion

Source: International journal of orthopaedic and trauma nursing; Aug 2017; vol. 26 ; p. 30-35

Publication Type(s): Journal Article

Abstract:AIMS AND OBJECTIVESTo generate a substantive theory that explained recovery from hip fracture from the perspective of older adults and find out how they managed it.BACKGROUNDHip fracture is a well-researched phenomenon. The perspective of how older adults recover from hip fracture has been examined least of all. Patients spend less time in hospital following injury and generally recover in their home setting.DESIGNA Glaserian grounded theory approach was used for this study.METHODSSemi-structured interviews (n-21) were conducted with older adult's post discharge following hip fracture. Data were collected, analysed and theorised using the grounded theory methodology.RESULTSOlder adults recovering from hip fracture were restored back to normal through a process in which they continuously balanced regaining of physical and social functioning against reasserting usual psycho-social behaviours within different contexts. Importantly, the older adult's personal recovery process starts within the acute setting once the person regains physical functioning, especially regaining mobility. From this point onwards, older adults will respond to health professionals, instructions and interventions in many ways. The responses will be based on their developmental life stage to enable them to counter the diverse expectations placed on them by health professionals, social networks and their self-beliefs.CONCLUSIONNurses need to understand that older adults will recover in their own way following discharge, often re-interpreting health information to fit their own situations.

Repair of Bimalleolar Ankle Fracture.

Author(s): Fisher, Nina; Atanda, Abiola; Swensen, Stephanie; Egol, Kenneth A

Source: Journal of orthopaedic trauma; Aug 2017; vol. 31

Publication Type(s): Journal Article

Abstract:PURPOSEThe incidence of ankle fractures is rapidly increasing in geriatric populations. Of the 4 fracture patterns described by the Lauge-Hansen classification system, supination-external rotation (SER) accounts for most ankle fractures. This video demonstrates surgical repair of a SER type 4 ankle fracture in a geriatric patient.METHODSSER type 4 ankle fractures are considered unstable and are generally treated with surgical fixation. After placement of plate and screws, intraoperative stress tests can be used to assess for syndesmotic widening. If necessary, the syndesmosis can be reduced open, with screw fixation placed parallel to the joint. Patients are kept non-weight-bearing for 6 weeks after surgery.RESULTSThis video, shot on an iPhone 6S, shows the case of a 66-year-old female status after a fall with twisting mechanism resulting in an unstable SER type 4 fracture requiring operative repair. Intraoperative stress test revealed medial clear space widening requiring syndesmotic reduction.CONCLUSIONSSER type 4 ankle fractures are a common injury that must be properly managed to return patients to baseline functional status. The surgical technique described in this video provides for good stabilization and allows for early range of motion with advancement to weight-bearing as tolerated at 6 weeks postoperatively.

Telemedicine-guided education on secondary stroke and fall prevention following inpatient rehabilitation for Texas patients with stroke and their caregivers: a feasibility pilot study.

Author(s): Jhaveri, Mansi M; Benjamin-Garner, Ruby; Rianon, Nahid; Sherer, Mark;

Source: BMJ open; Sep 2017; vol. 7 (no. 9); p. e017340

Publication Type(s): Journal Article

Available in full text at BMJ Open - from ProQuest

Abstract:INTRODUCTIONThe aftermath of stroke leaves many consequences including cognitive deficits and falls due to imbalance. Stroke survivors and families struggle to navigate the complex healthcare system with little assistance posthospital discharge, often leading to early hospital readmission and worse stroke outcomes. Telemedicine Guided Education on Secondary Stroke and Fall Prevention Following Inpatient Rehabilitation feasibility study examines whether stroke survivors and their caregivers find value in telerehabilitation (TR) home visits that provide individualised care and education by a multidisciplinary team after discharge from inpatient rehabilitation.METHODS AND ANALYSISA prospective, single arm, pilot study is designed to evaluate the feasibility of weekly TR home visits initiated postdischarge from inpatient rehabilitation. Newly diagnosed patients with stroke are recruited from a Houston-based comprehensive stroke centre inpatient rehabilitation unit, loaned an iPad with data plan and trained to use information technology security-approved videoconferencing application. After hospital discharge, six weekly TR home visits are led by rotating specialists (pharmacist, physical/occupational therapist, speech therapist, rehabilitation physician, social worker, geriatrician specialised in fracture prevention) followed by satisfaction survey on week 7. Specialists visually assess patients in real time, educate them on secondary stroke and fall prevention and suggest ways to improve function including direct medical interventions when indicated. Primary outcomes are proportion of eligible patients consenting to the study, participation rate in all six TR home visits and satisfaction score. The study started 31 December 2015 with plan to enrol up to 50 patients over 24 months. Feasibility study results will inform us as to whether a randomised controlled trial is warranted to determine efficacy of TR home visit intervention in improving stroke outcomes.ETHICS AND DISSEMINATIONEthics approval obtained by the Institutional Review Board (IRB), Committee for the Protection of Human Subjects, IRB number: HSC-MS-14-0994. Study results will be submitted for publication in a peer-reviewed journal.

The impact of helipad designation on meeting the best practice tariff for fractured neck of femur cases in a major trauma centre.

Author(s): Dabis, John; Hussein, Aliyah; Rickman, Mark

Source: The surgeon : journal of the Royal Colleges of Surgeons of Edinburgh and Ireland; Aug 2017; vol. 15 (no. 4); p. 202-205

Publication Type(s): Journal Article

Abstract: Hip fractures represent a significant burden to the NHS: the cost for all UK hip fractures is approximately £2 billion and in 2013, 64 838 people were admitted to hospital with a fractured neck of femur (FNOF). In April 2010 St George's NHS Hospital was designated one of four Major Trauma Centres (MTC) in London. Following MTC designation, in April 2014 St George's Hospital opened a helipad. This study aimed to assess the impact of the helipad designation on the Trust's ability to meet the Best Practice Tariff (BPT) criteria for FNOF patients. Two samples were analysed: 'pre-helipad' (from October 2013 to March 2014) during which 125 patients presented with FNOF, and 'post-helipad' (from April 2014 to September 2014) during which 122 patients presented with FNOF. The percentage of cases receiving surgery within 36 h, receiving joint care of a consultant geriatrician and a consultant orthopaedic surgeon, and receiving assessment by a geriatrician in the perioperative period were found not to have been negatively impacted by the helipad. However,

completion of routine recommended assessments including admission using the agreed assessment protocol (96.6% vs. 50%, p < 0.05) and completion of two Abbreviated Mental Test (AMT) scores (74.7% vs. 58%, p = 0.007) were found to have been compromised.

Management of Acetabular Fractures in the Elderly.

Author(s): Antell, Nicholas B; Switzer, Julie A; Schmidt, Andrew H

Source: The Journal of the American Academy of Orthopaedic Surgeons; Aug 2017; vol. 25 (no. 8); p. 577-585

Publication Type(s): Journal Article

Abstract: The incidence of acetabular fractures in the elderly population is increasing. Fractures in this population differ from those in younger patients, with more frequent involvement of the anterior column, more comminution, and more severe articular impaction in elderly patients. Although acetabular fractures in geriatric patients are more likely the result of low-energy trauma, outcomes are generally poorer than those in young patients. Multiple management options have been proposed, but no intervention has become the standard of care for these fractures in the elderly. Patient characteristics (eg, prior ambulation status, functional capacity, bone quality), the nature of the fracture, and the experience of the treating orthopaedic surgeon all must be considered when choosing among nonsurgical treatment, percutaneous fixation, open reduction and internal fixation, and immediate or delayed arthroplasty. Each treatment option has the potential for satisfactory results in properly selected patients.

Pain and fracture-related limitations persist 6 months after a fragility fracture.

Author(s): Sale, Joanna E M; Frankel, Lucy; Thielke, Stephen; Funnell, Larry

Source: Rheumatology international; Aug 2017; vol. 37 (no. 8); p. 1317-1322

Publication Type(s): Journal Article

Abstract: Our objective was to examine the experience of pain after a fracture beyond the conventional healing duration of 6 months. We conducted a phenomenological study in participants who were deemed high risk for future fracture and recruited through an urban fracture clinic in Toronto, Canada. In-depth interviews were conducted with questions addressing the experience of pain, the status of recovery from the fracture, ways in which the fracture affected one's daily activities, and interactions with health care providers. Two researchers coded the transcripts within the phenomenological perspective to develop a structure of the pain experience, promoting rigour through the use of multiple analysts, searching for negative cases, and supporting claims with direct quotations from participants. We interviewed 21 participants who had sustained fractures of the wrist (n = 4), hip (n = 6), vertebrae (n = 2), and multiple or other locations (n = 9). All patients were ambulatory, had a range of socioeconomic status, and lived in the community. Eleven of the 21 participants reported persistent pain at the site of the fracture. Of the 10 participants who reported no pain, four indicated they had ongoing difficulties with range of motion and specific activities and two others described persistent pain from a previous fracture or reliance on a scooter for mobility. Our study demonstrated that over two-thirds of older adults reported fracture-related pain and/or limitations at, or beyond, 6 months post-fracture. We suggest that health care providers ask questions about post-fracture pain and/or limitations when assessing fracture status beyond 6 months.

The evaluation of a strength and balance exercise program for falls prevention in community primary care.

Author(s): Hawley-Hague, Helen; Roden, Amy; Abbott, Jo

Source: Physiotherapy theory and practice; Aug 2017; vol. 33 (no. 8); p. 611-621

Publication Type(s): Journal Article

Abstract: We aimed to evaluate a strength and balance program delivered in the community. There is little evidence of implementation of evidence-based exercise in practice. The program was a step-down model, designed to encourage long-term exercise in community classes. The program consisted of a fully funded referral only evidence-based 12-week strength and balance (Community Otago) class, followed by an evidence-based continuous open-access community strength and balance class (Active Always). The program was offered to patients: 1) after formal falls rehabilitation (falls and fracture service); 2) after falls rehabilitation in intermediate care; and 3) referred by a GP who were not eligible for rehabilitation (preventative measure). Outcome evaluation used descriptive statistics to report changes in function, confidence in balance, hospital attendance/admission for falls/fractures and transition to community classes. Focus groups established participant experience/satisfaction. Seventy-nine participants were included, aged 56-96, and 53 (67%) were women. About 63.3% of patients transitioned to Active Always classes, demonstrating improvement in maintenance. Follow-up scores from baseline attendance at falls and fracture service to 12-weeks follow-up (24 weeks) in Community Otago showed the majority of patients improved their function (Timed up and Go), confidence (ConfBal) and lowered their falls risk (Tinetti). Follow-up of participants from Community Otago baseline to the end of 12-weeks showed improvement in function and confidence, but only a third of participants lowered their falls risk. Focus groups data suggest that continuity of delivery, the role of the instructor, health professional, and social and physical outcomes were essential for maintenance. A supportive environment can be created which encourages older adults' continued participation in group-based strength and balance, helping the delivery of evidence-based practice.

Increased number of community-living older adults attending an emergency department with falls and fractures: North Dublin experience

Author(s): Fan C.W.; Duggan J.; Brazil E.; McCarthy F.; Rodger D.

Source: Irish Journal of Medical Science; Aug 2017; vol. 186 (no. 3); p. 693-697

Publication Type(s): Article

Abstract: Background: The number of attendances to emergency department (ED) due to falls and fractures increases as the population ages. The community-based falls prevention strategy may reduce the number of falls requiring medical attention. Aim: Our aim was to determine the changes over time in community-living older adults on the number of attendances to an urban ED over a 5 year period. Methods: Community-living adults aged >=65 years from a catchment attending with falls and fractures to an ED in 2010 and 2014 were identified through an electronic patient record. The age, gender and patient-related outcome (admit, discharge with and without follow-up, died in department) were collected. Patient-related outcome was compared by age group. Results: There were 477 and 772 attendances with falls and fractures in 2010 and 2014, respectively. Between 3 and 7% were repeat attendees. Compared with 2010, in 2014, there were more women attendees; the proportion of patients aged >=80 years were higher, more likely to be admitted and discharged without follow-up. Patients aged 85+ were six times more likely to require admission compared with under 75's. Conclusion: With the rapidly ageing population in North Dublin, there is an urgent need to prioritise comprehensive assessment and provide a coordinated falls programme when older adults present to ED to reduce the risk of future falls and injuries.

Determinants of functional outcome in hip fracture: the role of comorbidity.

Author(s): Gialanella, Bernardo; Prometti, Paola; Monguzzi, Vittoria; Ferlucci, Cristina; Baiardi, Paola

Source: Aging clinical and experimental research; Aug 2017

Publication Type(s): Journal Article

Abstract:BACKGROUND AND AIMSExecuted studies did not clearly identify which index of comorbidity was an independent outcome determinant. The aim of this prospective observational cohort study was to address this issue.METHODSWe analyzed 200 consecutive patients with hip fracture. All patients underwent rehabilitation. At admission comorbidity was assessed through the cumulative severity, severity index, and comorbidity index of the Cumulative Illness Rating Scale. Discharge scores and effectiveness in the Functional Independence Measure motor subscale, and discharge destination were the outcome measures. Multivariate regression analyses were performed to identify determinants of outcome.RESULTSMini Mental State Examination and comorbidity index of the Cumulative Illness Rating Scale were important independent determinants of final (respectively, β = 0.46 and -0.25) and effectiveness (respectively, β = 0.47 and -0.25) in motor Functional Independence Measure scores, while hip strength and Rankin score were determinants of final motor Functional Independence Measure score (respectively, β = 0.21 and -0.20). Comorbidity index of the Cumulative Illness Rating Scale (odds ratio 8.18 for ≥3 versus < 3 comorbidity score; 95% confidence interval, 1.03-64.7) and Geriatric Depression Scale (odds ratio 4.02 for ≥6 versus ≤5 depression scale score; 95% confidence interval, 1.52-10.63) were risk indicators for nursing home.CONCLUSIONSAmong the indices of the Cumulative Illness Rating Scale, comorbidity index is the sole independent determinant of both motor Functional Independence Measure scores and discharge destination in hip fracture patients. This suggests to specifically evaluate this index to identify the patients who may be admitted to a rehabilitation program.

Foot disorders in the elderly: A mini-review.

Author(s): Rodríguez-Sanz, David; Tovaruela-Carrión, Natalia; López-López, Daniel;

Source: Disease-a-month : DM; Aug 2017

Publication Type(s): Journal Article

Abstract: Ageing process is associated with changes to the aspect, biomechanics, structure and function of the foot, it may be related with a marked presence of foot conditions, pain, disability and other overall health problems that constitute a major public health concern. Also, the prevalence of epidemiologic research found an incidence of foot problems which is even higher as a consequence of increasing life expectation. Several studies have also suggested that such foot disorders currently affect between 71 and 87% of older patients and are a frequent cause of medical and foot care. Thus, these kind problems are extremely common conditions in the general population, especially in the elderly who are associated with poor quality of life, balance impairment, increase the risk of falls, dificulty on putting shoes, fractures, restrict mobility and performance of activities of daily living that turn can produce serious physical, mental and social consequences in the older people. The role of the physician in the assessment, evaluation, and examination of foot problems is very important, yet it is often an overlooked and undervalued component of geriatric health care. The purpose of this article is to review and to provide an overview of the most common foot deformities precipitating factors, clinical presentation, evidence-based diagnostic evaluation, and treatment recommendations with a view to preventing medical conditions or deformities affecting the feet that may alter foot condition and general health amongst the elderly.

Reliability and responsiveness of physical activity measures in individuals after total knee arthroplasty

Author(s): Almeida, Gustavo J.

Source: Dissertation Abstracts International: Section B: The Sciences and Engineering; 2017; vol. 77 (no. 8)

Publication Type(s): Dissertation Abstract Dissertation

Abstract: Few instruments that measure physical activity (PA) can accurately quantify PA performed at both light and moderate intensities, which is particularly relevant in older adults. Evidence of their reliability and responsiveness to change is limited. The purposes of this study were to: 1) determine test-retest reliability of the Actigraph (ACT), SenseWear Armband (SWA) and the Community Healthy Activities Model Program for Seniors (CHAMPS) questionnaire in assessing free-living PA; and 2) determine the responsiveness to change in PA measured by the three instruments after an exercise program in individuals with knee osteoarthritis who underwent total knee arthroplasty (TKA).

Effects of limb length discrepancy on functional and health-related outcomes in hip fracture patients

Author(s): Johnson, Rasheeda Jameeka

Source: Dissertation Abstracts International Section A: Humanities and Social Sciences; 2017; vol. 77 (no. 10)

Publication Type(s): Dissertation Abstract Dissertation

Abstract: Background: Limb length discrepancy (LLD), a common complication following hip fracture, is present when paired lower extremities are of unequal lengths. LLD consequences include chronic low-back pain, standing imbalance, nerve palsy and gait abnormalities. There is a paucity of LLD studies in older adults and no study to date has investigated LLD in hip fracture patients, a large population of older adults experiencing late life disability and decline in functional mobility. Objectives: Specific aims of this study were to: (1) Determine the reproducibility, validity and repeatability of Dual Energy X-ray Absorptiometry-Linear Pixel Count (DXA-LPC) method to measure limb length and assess for LLD in hip fracture patients, using mixed effects regression modeling; (2) Determine the prevalence and changes in LLD over the 12-months post fracture using general linear modeling; and (3) Determine the association between LLD severity and functional and health-related outcomes during 12-months post fracture using general linear modeling. Methods: Data come from the Baltimore Hip Studies 4th cohort (BHS-4; 1998-2004), a study of 180 community-dwelling women age 65+ with incident hip fractures enrolled in a RCT of an in-home exercise intervention. Three expert assessors and study PI measured limb lengths from whole-body DXA images electronically stored from BHS-4 at baseline and 2, 6, and 12 months post-fracture. Functional and health-related outcomes included the Lower Extremity Gain Scale (LEGS), Yale Physical Activity Scale (YPAS), mobility score, number of falls, and hip and general pain and assessed at each follow-up time-point. Results: Reproducibility of DXA-LPC was moderate, while validity and repeatability were both excellent. Majority (~75%) of participants experienced LLD; findings were consistent across all study time-points. Mean absolute LLD did not statistically change over time (mean=14.7mm). Adjusted results indicate a significant adverse relationship between LLD severity and number of falls (p=0.006) with nonsignificant adverse relationships with other functional outcomes. Conclusions: LLD severity contributes significantly to falls during the year following a hip fracture. Findings also indicate clinically meaningful differences in functional outcomes between LLD groups. Interventional studies should investigate shoe lift therapy efficacy and other post-operative mechanisms to minimize the impact of LLD on post-fracture functional recovery.

Psychological

Examining the effects of dementia on the postoperative outcomes of older adults with hip fractures

Author(s): Seitz, Dallas P.

Source: Dissertation Abstracts International Section A: Humanities and Social Sciences; 2017; vol. 77 (no. 7)

Publication Type(s): Dissertation Abstract Dissertation

Abstract: This dissertation comprises three research studies related to the outcomes of older adults with dementia who sustained hip fractures in Ontario. (PsycINFO Database Record (c) 2017 APA, all rights reserved)

Erratum: Atypical antipsychotics and the risk of falls and fractures among older adults: An emulation analysis and an evaluation of additional confounding control strategies (Journal of Clinical Psychopharmacology (2017) 37 (162-168))

Author(s): anonymous

Source: Journal of Clinical Psychopharmacology; 2017; vol. 37 (no. 3); p. 322

Publication Type(s): Erratum

Abstract: The authors of an article published in the April 2017 issue of the Journal of Clinical Psychopharmacology requested clarification of the "Author Disclosure Information" on page 167. This information should read as follows: "Author Disclosure Information All coauthors are employees of Janssen Research & Development, LLC, a company that conducts research on schizophrenia and manufactures and sells antipsychotics. The authors declare no other conflicts of interest."

Changes in social isolation and loneliness following total hip and knee arthroplasty: longitudinal analysis of the English Longitudinal Study of Ageing (ELSA) cohort.

Author(s): Smith, T O; Dainty, J R; MacGregor, A J

Source: Osteoarthritis and cartilage; Sep 2017; vol. 25 (no. 9); p. 1414-1419

Publication Type(s): Journal Article

Abstract:OBJECTIVETo determine the prevalence and change in social isolation and loneliness in people before and after total hip arthroplasty (THA) and total knee arthroplasty (TKA) in England.DESIGNThe English Longitudinal Study of Ageing (ELSA) dataset, a prospective study of community-dwelling older adults, was used to identify people who had undergone primary THA or TKA because of osteoarthritis. Social isolation was assessed using the ELSA Social Isolation Index. Loneliness was evaluated using the Revised University of California, Los Angeles (UCLA) Loneliness Scale. The prevalence of social isolation and loneliness were calculated and multilevel modelling was performed to assess the potential change of these measures before arthroplasty, within a two-year operative-recovery phase and a following two-year follow-up.RESULTSThe sample consisted of 393 people following THA and TKA. The prevalence of social isolation and loneliness changed from 16.9% to 18.8% pre-operative to 21.8% and 18.9% at the final post-operative follow-up respectively. This was not a statistically significant change for either measure ($P = 0.15$; $P = 0.74$). There was a significant difference in social isolation at the recovery phase compared to the pre-operative phase ($P = 0.01$), where people following arthroplasty reported an increase in social isolation (16.9-21.4%). There was no significant difference between the assessment phases in respect to UCLA Loneliness Scale score ($P \geq 0.74$).CONCLUSIONSGiven the negative physical and psychological consequences which social isolation and loneliness can have on individuals following THA or TKA, clinicians should be mindful of this health challenge for this population. The reported prevalence of social isolation and loneliness suggests this is an important issue.

Pressure ulcers are associated with 6-month mortality in elderly patients with hip fracture managed in orthogeriatric care pathway.

Author(s): Magny, Emmanuelle; Vallet, Helene; Cohen-Bittan, Judith; Raux, Mathieu;

Source: Archives of osteoporosis; Aug 2017; vol. 12 (no. 1); p. 77

Publication Type(s): Journal Article

Abstract: Despite orthogeriatric management, 12% of the elderly experienced PUs after hip fracture surgery. PUs were significantly associated with a low albumin level, history of atrial fibrillation coronary artery disease, and diabetes. The risk ratio of death at 6 months associated with pressure ulcer was 2.38 (95% CI 1.31-4.32%, p = 0.044).INTRODUCTIONPressure ulcers in hip fracture patients are frequent and associated with a poor outcome. An orthogeriatric management, recommended by international guidelines in hip fracture patients and including pressure ulcer prevention and treatment, could influence causes and consequences of pressure ulcer. However, remaining factors associated with pressure ulcer occurrence and prognostic value of pressure ulcer in hip fracture patients managed in an orthogeriatric care pathway remain unknown.METHODSFrom June 2009 to April 2015, all consecutive patients with hip fracture admitted to a unit for Post-operative geriatric care were evaluated for eligibility. Patients were included if their primary presentation was due to hip fracture and if they were ≥ 70 years of age. Patients were excluded in the presence of pathological fracture or if they were already hospitalized at the time of the fracture. In our unit, orthogeriatric principles are implemented, including a multi-component intervention to improve pressure ulcer prevention and management. Patients were followed-up until 6 months after discharge.RESULTSFive hundred sixty-seven patients were included, with an overall 14.4% 6-month mortality (95% CI 11.6-17.8%). Of these, 67 patients (12%) experienced at least one pressure ulcer. Despite orthogeriatric management, pressure ulcers were significantly associated with a low albumin level (RR 0.90, 95% CI 0.84-0.96; p = 0.003) and history of atrial fibrillation (RR 1.91, 95% CI 1.05-3.46; p = 0.033), coronary artery disease (RR 2.16, 95% CI 1.17-3.99; p = 0.014), and diabetes (RR 2.33, 95% CI 1.14-4.75; p = 0.02). A pressure ulcer was associated with 6-month mortality (RR 2.38, 95% CI 1.31-4.32, p = 0.044).CONCLUSIONIn elderly patients with hip fracture managed in an orthogeriatric care pathway, pressure ulcer remained associated with poorly modifiable risk factors and long-term mortality.

Other

Falls in institutionalized older adults: risks, consequences and antecedents.

Author(s): Araújo, Antonio Herculano de; Patrício, Anna Cláudia Freire de Araújo;

Source: Revista brasileira de enfermagem; 2017; vol. 70 (no. 4); p. 719-725

Publication Type(s): Journal Article

Abstract: Objective:To analyze the occurrence of falls in institutionalized elderly addressing the risks, consequences and antecedents.Method:Cross-sectional study carried out with 45 older adults in Long-Term Care Facilities for the Older adult in João Pessoa, Brazil, in June and July 2016. A socio-demographic questionnaire and the Berg Balance Scale were applied, classifying as risk of fall scores lower than 45. Descriptive statistics and tests were conducted: independent t-test, Anova (Tukey), Chi-square, Mann Whitney. Statistically significance was p <0.05. Data were processed in SPSS version 19.0.Results:A total of 66.7% (30) falls occurred, 20% (9) of them in the external area, with 66.7% (30) of the participants having hypertension as a previous disease and, as consequence, the fracture was highlighted with 11.2% (5). The Berg Scale had different scores when compared to the falls suffered by the elderly and previous diseases influenced the occurrence of falls (p

<0.05).Conclusion:It is necessary to implement public financing policies or partnerships that allow environments adaptations aiming at reducing the risks of falls.

FRAIL Questionnaire Screening Tool and Short-Term Outcomes in Geriatric Fracture Patients.

Author(s): Gleason, Lauren Jan; Benton, Emily A; Alvarez-Nebreda, M Loreto; Weaver, Michael J; Harris, Mitchel B; Javedan, Houman

Source: Journal of the American Medical Directors Association; Aug 2017

Publication Type(s): Journal Article

Abstract:OBJECTIVESThere are limited screening tools to predict adverse postoperative outcomes for the geriatric surgical fracture population. Frailty is increasingly recognized as a risk assessment to capture complexity. The goal of this study was to use a short screening tool, the FRAIL scale, to categorize the level of frailty of older adults admitted with a fracture to determine the association of each frailty category with postoperative and 30-day outcomes.DESIGNRetrospective cohort study.SETTINGLevel 1 trauma center.PARTICIPANTSA total of 175 consecutive patients over age 70 years admitted to co-managed orthopedic trauma and geriatrics services.MEASUREMENTSThe FRAIL scale (short 5-question assessment of fatigue, resistance, aerobic capacity, illnesses, and loss of weight) classified the patients into 3 categories: robust (score = 0), prefrail (score = 1-2), and frail (score = 3-5). Postoperative outcome variables collected were postoperative complications, unplanned intensive care unit admission, length of stay (LOS), discharge disposition, and orthopedic follow-up after surgery. Thirty-day outcomes measured were 30-day readmission and 30-day mortality. Analysis of variance (1-way) and Kruskal-Wallis tests were used to compare continuous variables across the 3 FRAIL categories. Fisher exact tests were used to compare categorical variables. Multiple regression analysis, adjusted by age, sex, and Charlson index, was conducted to study the association between frailty category and outcomes.RESULTSFRAIL scale categorized the patients into 3 groups: robust (n = 29), prefrail (n = 73), and frail (n = 73). There were statistically significant differences between groups in terms of age, comorbidity, dementia, functional dependency, polypharmacy, and rate of institutionalization, being higher in the frailest patients. Hip fracture was the most frequent fracture, and it was more frequent as the frailty of the patient increased (48%, 61%, and 75% in robust, prefrail, and frail groups, respectively). The American Society of Anesthesiologists preoperative risk significantly correlated with the frailty of the patient (American Society of Anesthesiologists score 3-4: 41%, 82% and 86%, in robust, prefrail, and frail groups, P < .001). After adjustment by age, sex, and comorbidity, there was a statistically significant association between frailty and both LOS and the development of any complication after surgery (LOS: 4.2, 5.0, and 7.1 days, P = .002; any complication: 3.4%, 26%, and 39.7%, P = .03; in robust, prefrail, and frail groups). There were also significant differences in discharge disposition (31% of robust vs 4.1% frail, P = .008) and follow-up completion (97% of robust vs 69% of the frail ones). Differences in time to surgery, unplanned intensive care unit admission, and 30-day readmission and mortality, although showing a trend, did not reach statistical significance.CONCLUSIONSFrailty, measured by the FRAIL scale, was associated with increase LOS, complications after surgery, and discharge to rehabilitation facility in geriatric fracture patients. The FRAIL scale is a promising short screen to stratify and help operationalize the perioperative care of older surgical patients.

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Osteoporosis International

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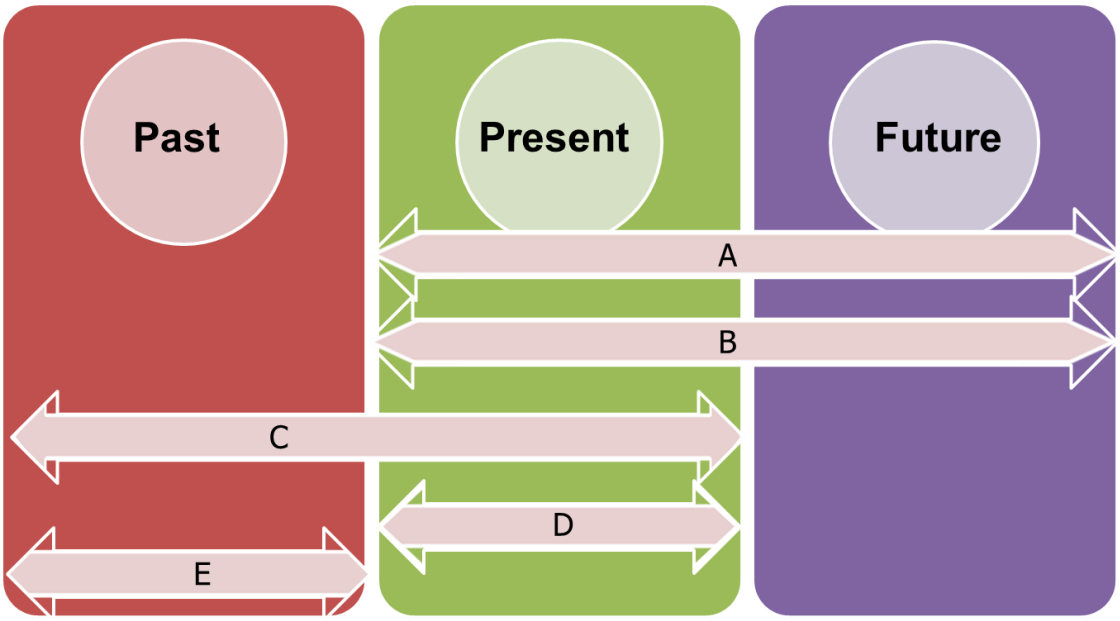
Exercise: Study Design Timeframes

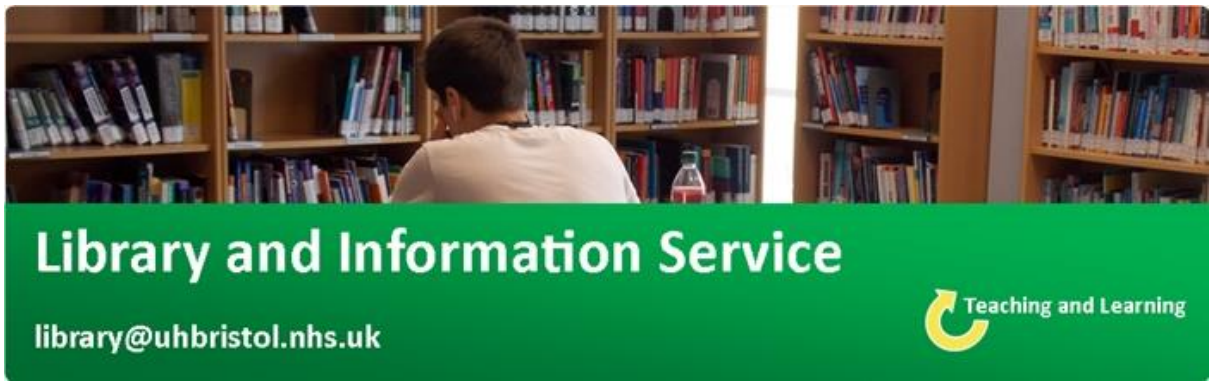
Match the study design with the timeframe it covers



1. **Randomised Controlled Trial**
2. **Cross-Sectional Study**
3. **Case-control Study**
4. **Cohort Study**
5. **Case Report**

Find out more about study designs in one of our training sessions.
For more details, email library@uhbristol.nhs.uk.

Answers: 1A/B; 2D; 3C; 4A/B; 5E



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