Orthogeriatrics

Current Awareness Newsletter

April 2015
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Your Friendly Local Librarian...

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New from Cochrane Library on Orthogeriatrics

PROTOCOL: Nerve blocks or no nerve blocks for pain control after elective hip replacement (arthroplasty) surgery in adults

Niraj V Kalore, Joanne Guay, Jamie M Eastman, Mina Nishimori and Jasvinder A Singh

Published 25th March 2015

Objectives: We aim to compare the relative effects (benefits and harms) of the different nerve blocks that may be used to relieve pain after elective hip replacement in adults.

SYSTEMATIC REVIEW: Braces and orthoses for treating osteoarthritis of the knee

Tijs Duivenvoorden, Reinoud W Brouwer, Tom M van Raaij, Arianne P Verhagen, Jan AN Verhaar and Sita MA Bierma-Zeinstra

Published 16th March 2015

Individuals with osteoarthritis (OA) of the knee can be treated with a knee brace or a foot/ankle orthosis. The main purpose of these aids is to reduce pain, improve physical function and, possibly, slow disease progression. This is the second update of the original review published in Issue 1, 2005, and first updated in 2007. Objectives: To assess the benefits and harms of braces and foot/ankle orthoses in the treatment of patients with OA of the knee.

New from NICE

Implantation of a shock or load absorber for mild to moderate symptomatic medial knee osteoarthritis

The National Institute for Health and Care Excellence (NICE) has issued full guidance to the NHS in England, Wales, Scotland and Northern Ireland on Implantation of a shock or load absorber for mild to moderate symptomatic medial knee osteoarthritis, in January 2015. Description: Osteoarthritis of the medial compartment of the knee is the result of progressive deterioration of the articular cartilage and menisci of the joint. This leads to exposure of the bone surface and chronic excessive joint loading during movement. Symptoms include joint pain, stiffness, local inflammation, limited movement and loss of knee function.

Treatment depends on the severity of the osteoarthritis. Conservative treatments include: analgesics and corticosteroid injections to relieve pain and inflammation; physiotherapy and exercise to improve function and mobility; and weight loss for people who are overweight or obese, as recommended in NICE’s guideline on osteoarthritis. When symptoms are severe, surgery may be indicated. Options include high tibial osteotomy and unicompartmental or total knee arthroplasty.
atypical antipsychotic medication use associated with increased risk of hip fracture in older adults (level 2 [mid-level] evidence)

- based on retrospective cohort study
- 97,777 adults ≥ 65 years old who received a new outpatient prescription for quetiapine, risperidone, or olanzapine matched with 97,777 similar persons without a prescription for atypical antipsychotics and followed for 90 days
- atypical antipsychotic medication use associated with increased risk of hip fracture (odds ratio 1.67, 95% CI 1.53-1.81)
- Reference - JAMA Intern Med 2015 Mar 1;175(3):450

combined IV and intra-articular tranexamic acid not associated with reduced blood loss or need for transfusion compared to IV tranexamic acid alone in patients having total knee arthroplasty (level 2 [mid-level] evidence)

- based on randomized trial with unclear method of randomization and blinding not stated
- 184 patients (mean age 65 years, 63.6% female) having unilateral total knee arthroplasty randomized to tranexamic acid 1.5 g IV plus tranexamic acid 1.5 g intra-articular vs. tranexamic acid 3 g IV alone
- IV tranexamic acid administered just prior to incision, and intra-articular tranexamic acid dissolved in 50 mL normal saline and irrigated in the wound after implantation of components
- no significant differences in blood loss or blood transfusion
- Reference - J Arthroplasty 2014 Dec;29(12):2342
Current Awareness 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: bennet.jones@uhbristol.nhs.uk

Medical

Title: The neutrophil-to-lymphocyte ratio (NLR) after surgery for hip fracture (HF).

Citation: Archives of gerontology and geriatrics, Mar 2015, vol. 60, no. 2, p. 366-371 (2015 Mar-Apr)

Author(s): Forget, Patrice, Moreau, Nicolas, Engel, Harald, Cornu, Olivier, Boland, Benoît, De Kock, Marc, Yombi, Jean-Cyr

Abstract: The NLR is a prognostic factor for outcome and survival in cardiology, oncology and digestive surgery. NLR has not yet been studied in HF. Retrospective analysis of a prospective cohort of 247 consecutive patients, older than 65 years, operated for HF. Mortality at 12 months was registered, as the perioperative NLR values. After hip surgery in the 247 patients (women 71%, median age 85 years, range: 66-102), the mortality was 27.2% [95% confidence interval (CI): 21.4-33.0] at 12 months. Univariate analysis detected four risk factors for mortality: age (Hazard Ratio (HR) - by 10 year increments: 2.08 [95% CI: 1.37-3.17], P 5 at day 5 (HR: 1.8 [95% CI: 1.11-2.94], P=0.002). In multivariate analysis, two factors remained significantly associated with mortality: age (HR: 2.28 [95% CI: 1.49-3.47], P 5 at day 5 (Odds Ratio (OR): 3.34 [95% CI: 2.33-4.80], P=0.001) and MCM (OR: 3.04 [95% CI: 2.16-4.29], P=0.006). A higher risk of infection was independently associated with a NLR > 5 at day 5 (OR: 2.12 [95% CI: 1.44-3.11], P=0.02). The NLR at fifth postoperative day is a risk factor of postoperative mortality and cardiovascular complications. Copyright © 2014 Elsevier Ireland Ltd. All rights reserved.

Title: LiDCO-based fluid management in patients undergoing hip fracture surgery under spinal anaesthesia: a randomized trial and systematic review.

Citation: British journal of anaesthesia, Mar 2015, vol. 114, no. 3, p. 444-459 (March 2015)

Abstract: Hip fracture is a condition with high mortality and morbidity in elderly frail patients. Intraoperative fluid optimization may be associated with benefit in this population. We investigated whether intraoperative fluid management using pulse-contour analysis cardiac monitoring, compared with standard care in patients undergoing spinal anaesthesia, would provide benefits in terms of reduced time until medically fit for discharge and postoperative complications. Patients undergoing surgical repair of fractured neck of femur, aged ≥60 yr, receiving spinal anaesthesia were enrolled in this single-centre, blinded, randomized, parallel group trial. Patients were allocated to either anaesthetist-directed fluid therapy or a pulse-contour-guided fluid optimization strategy using colloid (Gelofusine) boluses to optimize stroke volume. The primary outcome was time until medically fit for discharge. Secondary outcomes included postoperative complications, mobility, and mortality. We updated a systematic review to include relevant trials to 2014. We recruited 130 patients. Time until medically fit for discharge was similar in both groups, mean [95% confidence interval (CI)] 12.2 (11.1-13.5) vs 13.1 (11.9-14.5) days (P=0.31), as was total length of stay 14.2 (12.9-15.8) vs 15.3 (13.8-17.2) days (P=0.32). There were no significant differences in complications, function, or mortality. An updated meta-analysis (four studies, 355 patients) found non-significant reduction in early mortality [relative risk 0.66 (0.24-1.79)] and in-hospital complications [relative risk 0.80 (0.61-1.05)]. Goal-directed fluid therapy during hip fracture repair under spinal anaesthesia does not result in a significant reduction in length of stay or postoperative complications. There is insufficient evidence to either support or discount its routine use. ISRCTN88284896. © The Author 2014. Published by Oxford University Press on behalf of the British Journal of Anaesthesia. All rights reserved. For Permissions, please email: journals.permissions@oup.com.

Title: The curative effect comparison between prolonged third generation of gamma nail and prolonged dynamic hip screw internal fixation in treating femoral intertrochanteric fracture and the effect on infection.

Citation: Cell biochemistry and biophysics, Mar 2015, vol. 71, no. 2, p. 695-699 (March 2015)

Author(s): He, Wenye, Zhang, Wei

Abstract: The objective was to explore the curative effect of prolonged third generation of gamma nail (pTGN) and prolonged dynamic hip screw (pDHS) internal fixation in treating femoral intertrochanteric fracture, and analyze the incidence rate of infection for better clinical diagnosis and treatment. Sixty five patients with femoral intertrochanteric fracture during February, 2011-February, 2013 were selected and divided into two groups, with one receiving pTGN (control group) and the other one receiving pDHS internal fixation (observation group). The clinical effects of two groups were compared. In control group, the excellent and good rate was 78.13 %, the total effective rate was 87.5 %, and the total complication rate was 6.24 %; in observation group, the excellent and good rate was 78.79 %, the total effective rate was 90.91 %, the total complication rate was 6.06 %; there was no statistical difference between two groups (p > 0.05). The operation time, the intraoperative fluoroscopy time, and the total blood loss had statistically significant difference between two groups (p 0.05). Both pTGN and pDHS internal fixation were effective on femoral intertrochanteric fracture, with pDHS internal fixation having better overall efficiency.
Title: Factors that influence soft tissue thickness over the greater trochanter: Application to understanding hip fractures.

Citation: Clinical anatomy (New York, N.Y.), Mar 2015, vol. 28, no. 2, p. 253-261 (March 2015)

Author(s): Levine, Iris C, Minty, Lauren E, Laing, Andrew C

Abstract: Fall-related hip injuries are a concern for the growing population of older adults. Evidence suggests that soft tissue overlying the greater trochanter attenuates the forces transmitted to the proximal femur during an impact, reducing mechanical risk of hip fracture. However, there is limited information about the factors that influence trochanteric soft tissue thickness. The current study used ultrasonography and electromyography to determine whether trochanteric soft tissue thickness could be quantified reproducibly and whether it was influenced by: (1) gender; (2) hip postures associated with potential falling configurations in the sagittal plane (from 30° of extension to 60° of flexion, at 15° intervals), combined adduction-flexion, and combined adduction-extension; and (3) activation levels of the tensor fascia lata (TFL) and gluteus medius (GM) muscles. Our results demonstrated that soft tissue thickness can be measured reliably in nine hip postures and three muscle activation conditions (for all conditions, ICC >0.98). Mean (SD) thickness in quiet stance was 2.52 cm. Thickness was 27.0% lower for males than females during quiet stance. It was 16.4% greater at maximum flexion than quiet standing, 27.2% greater at maximum extension, and 12.5% greater during combined adduction-flexion. However, there was no significant difference between combined adduction-extension and quiet standing. Thickness was not affected by changes in muscle activity. Forces applied to the femoral neck during a lateral fall decrease as trochanteric soft tissue thickness increases; gender and postural configuration at impact could influence the loads applied to the proximal femur (and thus hip fracture risk) during falls on the hip. Clin. Anat. 28:253-261, 2015. © 2014 Wiley Periodicals, Inc. © 2014 Wiley Periodicals, Inc.

Title: Diabetes confers little to no increased risk of postoperative complications after hip fracture surgery in geriatric patients.

Citation: Clinical orthopaedics and related research, Mar 2015, vol. 473, no. 3, p. 1043-1051 (March 2015)

Author(s): Golinvaux, Nicholas S, Bohl, Daniel D, Basques, Bryce A, Baumgaertner, Michael R, Grauer, Jonathan N

Abstract: Diabetes and hip fractures in geriatric patients are common, and many elderly patients have a history of diabetes. However, the influence of diabetes on surgical complications may vary based on which particular type of diabetes a patient has. To our knowledge, no prior study has stratified patients with diabetes to compare patients with noninsulin-dependent and insulin-dependent diabetes regarding rates of postoperative adverse events, length of hospitalization, and readmission rate after surgical stabilization of hip fractures in geriatric patients. We asked whether patients with noninsulin-dependent or insulin-dependent diabetes are at increased risk (1) of sustaining an aggregated serious adverse event, aggregated minor adverse event, extended length
of stay, or hospital readmission within 30 days of hip fracture surgery; (2) of experiencing any individual serious adverse event within 30 days of hip fracture surgery; and (3) of experiencing any individual minor adverse event within 30 days of hip fracture surgery. Patients older than 65 years undergoing surgery for hip fracture between 2005 and 2012 were identified (n = 9938) from the American College of Surgeons National Surgical Quality Improvement Program(®) database. This database reports events within 30 days of the surgery. Demographics were compared between three groups of patients: patients with noninsulin-dependent diabetes, patients with insulin-dependent diabetes, and patients without diabetes. Patients without diabetes served as the reference group, and the relative risks for aggregated serious adverse events, aggregated minor adverse events, length of stay greater than 9 days, and readmission within 30 days were calculated for patients with noninsulin-dependent and with insulin-dependent diabetes. We then calculated relative risks for each specific serious adverse event and minor adverse event using multivariate analyses. Patients with noninsulin-dependent and insulin-dependent diabetes were at no greater risk of sustaining an aggregated serious adverse event, aggregated minor adverse event, extended postoperative length of stay, or readmission. Among individual serious adverse events, only postoperative myocardial infarction was found to be increased in the diabetic groups (relative risk [RR] = 1.9 for noninsulin-dependent diabetes, 95% CI, 1.3-2.8; RR = 1.5 for insulin-dependent diabetes, CI, 0.9-2.6; p = 0.003). Patients with noninsulin-dependent and insulin-dependent diabetes were at no greater risk of sustaining any individual minor adverse event. Despite previously reported and perceived risks associated with diabetes, we found little difference in terms of perioperative risk among geriatric patients with hip fracture with noninsulin-dependent or insulin-dependent diabetes relative to patients without diabetes. Clinically, the implications of these findings will help to improve, specify, and increase the efficiency of the preoperative workup and counseling of patients with diabetes who need hip fracture surgery. Level III, case-control study. See Instructions for Authors for a complete description of levels of evidence.

Title: Risk factors for the second contralateral hip fracture in elderly patients: a systematic review and meta-analysis.

Citation: Clinical rehabilitation, Mar 2015, vol. 29, no. 3, p. 285-294 (March 2015)

Author(s): Liu, Song, Zhu, Yanbin, Chen, Wei, Sun, Tao, Cheng, Jiaxiang, Zhang, Yingze

Abstract: To achieve a quantitative and comprehensive conclusion concerning the risk factors for the second contralateral hip fracture in elderly patients with initial hip fractures. This search was applied to Medline, Embase, Cochrane central database (all up to April 2014). All the studies on bilateral hip fractures in elderly patients published in English were reviewed and qualities of included studies were assessed using the Newcastle-Ottawa Scale. All the data were carefully and independently abstracted by two reviewers, any disagreement was settled by discussion. Data was pooled and a meta-analysis completed. A total of 13 case-control studies were identified for the meta-analysis. The significant risk factors were female (odds ratio (OR), 1.30; 95% confidence interval (CI), 1.02-1.64), living in institutions (OR, 2.53; 95% CI, 1.33-4.85), osteoporosis (OR, 10.02; 95% CI, 5.41-18.57), low vision (OR, 2.09; 95% CI, 1.06-4.12), dementia (OR, 2.02; 95% CI, 1.54-2.65), dizziness (OR, 2.87; 95% CI, 1.42-5.87) cardiac diseases (OR, 1.33; 95% CI, 1.00-1.78) and respiration diseases (OR, 2.58; 95% CI, 1.22-5.47). No significant difference was found in admission age between patients
with the unilateral hip fracture and the first hip fracture of bilateral hip groups (standardized mean difference, 0.02, 95% CI, -0.30 to 0.35). Patients involved with female, living in institutions, osteoporosis, low vision, dizziness, dementia, respiration diseases and cardiac diseases were at risk for a second contralateral hip fracture after the initial hip fracture. © The Author(s) 2014.

Title: Osteoporosis after renal transplantation.

Citation: International urology and nephrology, Mar 2015, vol. 47, no. 3, p. 503-511 (March 2015)

Author(s): Dounousi, Evangelia, Leivaditis, Konstantinos, Eleftheriadis, Theodoros, Liakopoulos, Vassilios

Abstract: Bone loss and fracture are serious sequelae of kidney transplantation, associated with morbidity, mortality and high economic costs. The pathogenesis of post-transplantation bone loss is multifactorial and complex. Pre-existing bone mineral disease is responsible for a significant part, but it is aggravated by risk factors emerging after renal transplantation with immunosuppressive agents being one of the key contributors. The decrease in bone mass is particularly prominent during the first 6-12 months after transplantation, continuing at a lower rate thereafter. Bone mineral density measurements do not predict bone histology and bone biopsy findings reveal heterogeneous lesions, which vary according to time after transplantation. Currently, vitamin D and bisphosphonates are the most extensively tested therapeutic agents against this accelerated bone loss in renal transplant recipients. Both of these agents have proven effective, but there is no evidence that they decrease fracture risk. More studies are needed to examine the complex pathophysiologic mechanisms implicated in this population, as well as the effects of different therapeutic interventions on bone disorders after kidney transplantation.

Title: Abdominal obesity increases the risk of hip fracture. A population-based study of 43 000 women and men aged 60-79 years followed for 8 years. Cohort of Norway.

Citation: Journal of internal medicine, Mar 2015, vol. 277, no. 3, p. 306-317 (March 2015)


Abstract: The question as to whether abdominal obesity has an adverse effect on hip fracture remains unanswered. The purpose of this study was to investigate the associations of waist circumference, hip circumference, waist-hip ratio, and body mass index with incident hip fracture. The data in this prospective study is based on Cohort of Norway, a population-based cohort established during 1994-2003. Altogether 19,918 women and 23,061 men aged 60-79 years were followed for a median of 8.1 years. Height, weight, waist and hip circumference were measured at baseline using standard procedures. Information on covariates was collected by questionnaires. Hip fractures (n = 1,498 in women, n = 889 in men) were identified from electronic discharge registers from all general hospitals in Norway between 1994 and 2008. The risk of hip fracture decreased with increasing body mass index, plateauing in obese men. However, higher waist circumference and
higher waist-hip ratio were associated with an increased risk of hip fracture after adjustment for body mass index and other potential confounders. Women in the highest tertile of waist circumference had an 86% (95% CI: 51-129%) higher risk of hip fracture compared to the lowest, with a corresponding increased risk in men of 100% (95% CI 53-161%). Lower body mass index combined with abdominal obesity increased the risk of hip fracture considerably, particularly in men. Abdominal obesity was associated with an increased risk of hip fracture when body mass index was taken into account. In view of the increasing prevalence of obesity and the number of older people suffering osteoporotic fractures in Western societies, our findings have important clinical and public health implications. © 2014 The Association for the Publication of the Journal of Internal Medicine.

Title: Functional Outcomes After Total Hip Arthroplasty for the Acute Management of Acetabular Fractures: 1- to 14-Year Follow-up.

Citation: Journal of orthopaedic trauma, Mar 2015, vol. 29, no. 3, p. 151-159 (March 2015)

Author(s): Lin, Carol, Caron, Jason, Schmidt, Andrew H, Torchia, Michael, Templeman, David

Abstract: This study reports the complications and functional outcomes in patients treated acutely with combined open reduction internal fixation (ORIF) and immediate total hip arthroplasty (THA) for displaced comminuted acetabular fractures. Single surgeon retrospective case series. Level 1 trauma center. Thirty-three consecutive patients (18 women; mean age, 66 years) from 1996 to 2011 with an average follow-up of 5.6 years (range, 1-14.3 years) were included in this study. ORIF and immediate THA. Oxford Hip Score and reoperation. All patients had at least 1 year of telephone or clinical follow-up. Postoperative complications, reoperations, and available radiographs were reviewed. Six patients died of causes unrelated to their injuries or surgery; before death, these patients had well-functioning hips. There was a 15% complication rate. At last follow-up, 94% of hips remained in situ and were functioning well. The average Oxford Hip Score at final follow-up was 17 (range, 12-32), with 93% of patients reporting good to excellent function. There was no statistical association between fracture type, age, or fixation type and outcome. Acute ORIF and immediate THA for selected acetabular fractures is a safe viable treatment option with good to excellent functional outcomes and may reduce the need for 2 separate operations in many patients. Functional outcomes are equivalent to those after primary THA for osteoarthritis. This study does not address at which age acute THA is a cost-effective treatment option. Therapeutic Level IV. See Instructions for Authors for a complete description of levels of evidence.

Title: Modular hip implant fracture at the stem-sleeve interface.

Citation: Orthopedics, Mar 2015, vol. 38, no. 3, p. e234. (March 1, 2015)

Author(s): Parisi, Thomas, Burroughs, Brian, Kwon, Young-Min

Abstract: The use of modular implants in femoral stem design has grown increasingly popular over the last decade because of the theoretical advantage of more flexibility and optimization of femoral anteversion, limb length, and femoral component offset. With the benefit of increased surgical
flexibility, however, modularity also carries the theoretical risks of fretting at the modular surfaces, sequelae of wear debris, and possible failure and fracture of the stem at the modular junction. Indeed, there have been an increasing number of reports of modular implants failing due to fracture at modular junctions. The S-ROM prosthesis (DePuy Orthopaedics, Inc, Warsaw, Indiana), however, has a stellar clinical record and has been used with good results in both primary and revision total hip arthroplasty. Only a single case of S-ROM failure at the stem-sleeve interface has been reported in the orthopedic literature. The aim of this case report was to present a succinct history of proximal modularity in total hip arthroplasty and to describe the only known case of this type of catastrophic failure in an S-ROM prosthesis with a metal-on-metal bearing. Despite a low level of serum metal ions on presentation, scanning electron microscopy showed findings consistent with corrosive processes and pseudotumor was seen at revision surgery. [Orthopedics. 2015; 38(3):e234-e239.].

Title: Sliding hip screw versus sliding helical blade for intertrochanteric fractures: a propensity score-matched case control study.

Citation: The bone & joint journal, Mar 2015, vol. 97-B, no. 3, p. 398-404 (March 2015)

Author(s): Fang, C, Lau, T W, Wong, T M, Lee, H L, Leung, F

Abstract: The spiral blade modification of the Dynamic Hip Screw (DHS) was designed for superior biomechanical fixation in the osteoporotic femoral head. Our objective was to compare clinical outcomes and in particular the incidence of loss of fixation. In a series of 197 consecutive patients over the age of 50 years treated with DHS-blades (blades) and 242 patients treated with conventional DHS (screw) for AO/OTA 31.A1 or A2 intertrochanteric fractures were identified from a prospectively compiled database in a level 1 trauma centre. Using propensity score matching, two groups comprising 177 matched patients were compiled and radiological and clinical outcomes compared. In each group there were 66 males and 111 females. Mean age was 83.6 (54 to 100) for the conventional DHS group and 83.8 (52 to 101) for the blade group. Loss of fixation occurred in two blades and 13 DHSs. None of the blades had observable migration while nine DHSs had gross migration within the femoral head before the fracture healed. There were two versus four implant cut-outs respectively and one side plate pull-out in the DHS group. There was no significant difference in mortality and eventual walking ability between the groups. Multiple logistic regression suggested that poor reduction (odds ratio (OR) 11.49, 95% confidence intervals (CI) 1.45 to 90.9, p = 0.021) and fixation by DHS (OR 15.85, 95%CI 2.50 to 100.3, p = 0.003) were independent predictors of loss of fixation. The spiral blade design may decrease the risk of implant migration in the femoral head but does not reduce the incidence of cut-out and reoperation. Reduction of the fracture is of paramount importance since poor reduction was an independent predictor for loss of fixation regardless of the implant being used.

Title: The determinants of mortality and morbidity during the year following fracture of the hip: a prospective study.

Citation: The bone & joint journal, Mar 2015, vol. 97-B, no. 3, p. 383-390 (March 2015)
Author(s): Mariconda, M, Costa, G G, Cerbasi, S, Recano, P, Aitanti, E, Gambacorta, M, Misasi, M

Abstract: Several studies have reported the rate of post-operative mortality after the surgical treatment of a fracture of the hip, but few data are available regarding the delayed morbidity. In this prospective study, we identified 568 patients who underwent surgery for a fracture of the hip and who were followed for one year. Multivariate analysis was carried out to identify possible predictors of mortality and morbidity. The 30-day, four-month and one-year rates of mortality were 4.3%, 11.4%, and 18.8%, respectively. General complications and pre-operative comorbidities represented the basic predictors of mortality at any time interval (p

Patient care and management

Title: Number of drugs in the medication list as an indicator of prescribing quality: a validation study of polypharmacy indicators in older hip fracture patients.

Citation: European journal of clinical pharmacology, Mar 2015, vol. 71, no. 3, p. 363-368 (March 2015)

Author(s): Belfrage, Björn, Koldestam, Anders, Sjöberg, Christina, Wallerstedt, Susanna M

Abstract: Indicators based on the number of drugs in the medication list are sometimes used to reflect quality of drug treatment. This study aimed to evaluate the concurrent validity of such polypharmacy indicators, i.e., their ability to differentiate between appropriate and suboptimal drug treatment. In 200 hip fracture patients (≥65 years of age), consecutively recruited to a randomized controlled study in Sahlgrenska University Hospital in 2009, quality of drug treatment at study entry was assessed according to a gold standard as well as to indicators based on the number of drugs in the medication list. As gold standard, two specialist physicians independently assessed and then agreed on the quality for each patient, after initial screening with Screening Tool of Older Persons' potentially inappropriate Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START). Suboptimal drug treatment was defined as ≥1 STOPP/START outcomes assessed as clinically relevant at the individual level. A total of 141 (71 %) patients had suboptimal drug treatment according to the gold standard. The corresponding figures according to the indicators ≥5 and ≥10 drugs were 149 (75) and 49 (25 %), respectively. The sensitivity for the indicators ≥5 and ≥10 drugs to detect suboptimal drug treatment was 0.86 (95 % confidence interval: 0.80; 0.92) and 0.32 (0.25; 0.40), respectively. The specificity was 0.53 (0.41; 0.65) and 0.93 (0.82; 0.97). The findings suggest that no polypharmacy indicator could serve as a general indicator of prescribing quality; cut-offs for such indicators need to be chosen according to purpose.

Title: Management of osteoporosis in rheumatoid arthritis patients.

Citation: Expert opinion on pharmacotherapy, Mar 2015, vol. 16, no. 4, p. 559-571 (March 2015)

Author(s): Hoes, Jos N, Bultink, Irene Em, Lems, Willem F
Abstract: In rheumatoid arthritis (RA) patients, the risk of both vertebral and non-vertebral fractures is roughly doubled, which is for an important part caused by inflammation-mediated amplification of bone loss and by immobilization. New treatments have become available in the last two decades to treat both RA and osteoporosis. Epidemiology and assessment of osteoporosis and fracture risk (including the influence of RA disease activity and bone-influencing medications such as glucocorticoids), the importance of vertebral fracture assessment in addition to bone density measurement in patients with RA, the use of disease-modifying antirheumatic drugs and their effects on generalized bone loss, and current and possible future anti-osteoporotic pharmacotherapeutic options are discussed with special focus on RA. Assessment of osteoporosis in RA patients should include evaluation of the effects of disease activity and bone-influencing medications such as (the dose of) glucocorticoids, above standard risk factors for fractures or osteoporosis as defined by the FRAX instrument. Disease-modifying antirheumatic drugs are now well able to control disease activity using treat to target strategies. This lowering of disease activity by antirheumatic medications such as anti-TNF-α results in hampering of generalized bone loss; however, no fracture data are currently available. When treating osteoporosis in RA patients, additional focus should be on calcium supplementation, particularly in glucocorticoid users, and also on sufficient vitamin D use. Several anti-osteoporotic medications are now on the market; oral bisphosphonates are most commonly used, but in recent years, more agents have entered the market such as the parenteral antiresorptives denosumab (twice yearly) and zoledronic acid (once yearly), and the anabolic agent parathyroid hormone analogues. New agents, such as odanacatib and monoclonal antibodies against sclerostin, are now being tested and will most likely enlarge the possibilities of osteoporosis treatment in RA patients.

Title: Can Geriatric Hip Fractures be Managed Effectively Within a Level 1 Trauma Center?

Citation: Journal of orthopaedic trauma, Mar 2015, vol. 29, no. 3, p. 160-164 (March 2015)

Author(s): Ling, Shi-Neng James, Kleimeyer, Christopher, Lynch, Genni, Burmeister, Elizabeth, Kennedy, Diana, Bell, Kate, Watkins, Leith, Cooke, Cameron

Abstract: To determine whether geriatric hip fractures can be managed effectively within a level 1 trauma center. A prospective observational cohort study with a historical control group. Level 1 trauma center. A total of 199 patients admitted under our hip fracture service were prospectively identified from 2011-2012. These were compared with 191 hip fracture patients who were admitted before the service. The hip fracture service includes coadmission under an orthopaedic and a geriatric team. A daily, consultant-led operating list was made available for hip fracture surgery. A "neck of femur" nurse was employed to coordinate patient care. Time to surgery, length of stay, discharge destination, and mortality. A cost-benefit analysis and a comparison with a lower acuity hospital were also performed. Since the hip fracture service, more patients underwent surgery within 48 hours (67% vs. 52%; P = 0.004), the length of stay significantly decreased from 26 to 22 days (P = 0.004), significantly more patients were admitted to the rehabilitation unit (58.7% vs. 3.5%; P
Title: Complications and institutionalization are almost doubled after second hip fracture surgery in the elderly patient.

Citation: Journal of orthopaedic trauma, Mar 2015, vol. 29, no. 3, p. e103. (March 2015)

Author(s): van der Steenhoven, Tim J, Staffhorst, Bas, Van de Velde, Samuel K, Nelissen, Rob G H H, Verhofstad, Michiel H J

Abstract: To determine patient and hip fracture characteristics, early postoperative complication rate, and need for institutionalization at the time of discharge from the hospital in patients treated for a second contralateral hip fracture. During a 6-year period (2003-2009), 71 patients (60 women and 11 men; age range, 54-94 years) underwent first hip fracture surgery and subsequent contralateral hip fracture surgery at our hospital. Variables, including age, gender, American Society of Anesthesiologists classification (ASA), AO fracture classification, time between both hip fractures, rate and severity of early postoperative complications, and destination of discharge were obtained from the electronic medical records. Data from both hospitalization periods were compared. Forty-six percent of second hip fractures occurred within 2 years after the first hip fracture. After the first hip fracture surgery, 13 patients had 1 or multiple complications compared with 23 patients after a second hip fracture surgery (P = 0.02). The mean time (±SD) between the first and second hip fractures in patients without complications after the second injury was 4.3 (±4.2) years, compared with 2.6 (±2.1) years in patients with complications after the second injury (P = 0.03). The mean ASA classification of patients without complications after the second hip fracture surgery was 2.6 (±0.6) versus 3.0 (±0.6) in patients with complications (P = 0.04). After the first hip fracture surgery, 27 patients (38%) were discharged to an institutional care facility, whereas 72% of patients resided at an institutional care facility after a second hip fracture. Early complication rate in patients sustaining a second contralateral hip fracture was almost twice that documented after the first hip fracture. After the second hip fracture surgery, most patients resided in an institutional care facility.

Prognostic Level II. See Instructions for Authors for a complete description of levels of evidence.

Title: Hospital readmission after hip fracture.

Citation: Archives of orthopaedic and trauma surgery, Mar 2015, vol. 135, no. 3, p. 329-337 (March 2015)

Author(s): Kates, Stephen L, Behrend, Caleb, Mendelson, Daniel A, Cram, Peter, Friedman, Susan M

Abstract: Readmission to the hospital following a hip fracture is common, often involves an adverse event, and strains an already overburdened health care system. To assess the rate of 30-day readmission to the hospital after discharge for care of hip fracture. A secondary objective was measurement of the 30-day mortality rate for those patients readmitted versus those patients not readmitted to the hospital after discharge. Study design was a retrospective review of registry data comparing readmitted patients to those not readmitted after hip fracture. Setting was a university affiliated level 3 trauma center. 1,081 patients aged 65 and older. rate of readmission, rate of mortality, predictors of readmission. 129 patients (11.9 %) were readmitted to the hospital within 30 days of their initial discharge date. The primary causes of readmission were surgical in nature for 24/129 (18.6 %) patients and 105/129 (81.4 %) were readmitted for medical or other reasons.
Twenty-four (18.6%) patients who were readmitted died during readmission. The one-year mortality rate for patients readmitted within 30 days was 56.2 vs. a 21.8% 1-year mortality rate for those patients not readmitted (p 85 (OR = 1.52; p = 0.03), time to surgery >24 h (OR = 1.50; p = 0.05), Charlson score ≥4 (OR = 1.70; p = 0.04), delirium (OR = 1.65; p = 0.01), dementia (OR = 1.61; p = 0.01), history of arrhythmia with pacemaker placement (OR = 1.75; p = 0.02), and presence of a pre-op arrhythmia (OR = 1.62; p = 0.02). Readmission after hip fracture is harmful and undesirable 18.6% of readmitted patients died during their readmission and the average length of stay was 8.7 days. Approximately one of every six readmissions was identified as potentially preventable with interventions.

Title: Factors affecting delay to surgery and length of stay for patients with hip fracture.

Citation: Journal of orthopaedic trauma, Mar 2015, vol. 29, no. 3, p. e109. (March 2015)

Author(s): Ricci, William M, Brandt, Angel, McAndrew, Christopher, Gardner, Michael J

Abstract: The purpose of this study was to determine factors, including day of week of hospital admission, associated with delay to surgery (DTS) and increased length of stay (LOS) in patients with hip fractures. Retrospective. Level I Trauma Center. Six hundred thirty-five consecutive patients admitted to a single hospital between January 1999 and July 2006 aged 65 years or older with a hip fracture (OTA 31) were identified retrospectively from an orthopaedic database. Demographic data, American Society of Anesthesiologists (ASA) score, hospital admission and discharge dates, the date of surgery, and details of any preoperative cardiac testing were extracted from the hospital record. These data were used to identify the day of week for hospital admission and to calculate days for DTS and hospital LOS. Linear regression was used to identify independent variables associated with DTS and increased LOS. All patients underwent surgical treatment of a hip fracture (OTA 31). Factors affecting DTS and LOS. Independent factors associated with DTS included the day of week for hospital admission, ASA score, and the need for preoperative cardiac testing. Patients admitted Thursday through Saturday had longer DTS (mean, 2.2-2.7 days) than did patients admitted other days (mean, 1.7-1.8). DTS increased for increasing ASA: 1.4 days for ASA 2, 2.0 days for ASA 3, and 3.0 days for ASA 4. Those requiring preoperative cardiac testing had an increased number of days to surgery (mean, 3.2 days) than those without (mean, 1.7 days). Independent factors associated with increasing hospital LOS included ASA, the need for preoperative cardiac testing, male gender, and day of admission. LOS increased for increasing ASA: 6.3 days for ASA 2, 8.1 days for ASA 3, and 10.1 days for ASA 4. Those requiring preoperative cardiac testing had an increased LOS (mean, 9.4 days) than those without (mean, 7.3 days). Male patients had a longer LOS (mean, 9.8 days) than did females (mean, 7.3 days). Patients admitted on Thursday or Friday (mean, 8.5-9.1 days) had longer LOS than those admitted on other days (mean, 7.3-7.9 days). This is the first study to consider and identify the day of admission and need for preoperative cardiac tests as determinants of DTS and LOS for geriatric patients with hip fracture. Relative scarcity of weekend hospital resources, when present, may be responsible for these delays. This study also confirms that patient medical condition as measured by ASA affects both DTS and LOS. Prognostic Level II. See Instructions for Authors for a complete description of levels of evidence.
Title: Postoperative length of stay and 30-day readmission after geriatric hip fracture: an analysis of 8434 patients.

Citation: Journal of orthopaedic trauma, Mar 2015, vol. 29, no. 3, p. e115. (March 2015)

Author(s): Basques, Bryce A, Bohl, Daniel D, Golinvaux, Nicholas S, Leslie, Michael P, Baumgaertner, Michael R, Grauer, Jonathan N

Abstract: To identify factors associated with increased postoperative length of stay (LOS) and readmission after surgical repair of geriatric hip fractures. Patients aged 70 years and older who underwent hip fracture surgery from January 2011 through December 2012 were identified in the American College of Surgeons National Surgical Quality Improvement Program database. Patient characteristics were tested for association with postoperative LOS and readmission using bivariate and multivariate analyses. For the 8434 patients with hip fracture identified, the average age was 83.8 ± 5.9 years (mean ± SD), and 26.9% were male. Average postoperative LOS was 5.6 ± 6.0 days. Ten percent were readmitted within the first 30 postoperative days. Increased postoperative LOS of at least 1 full day was associated with increased time from admission to surgery, non-general anesthesia, and procedure type on multivariate analysis. Readmission was associated with increased age, male sex, body mass index ≥35 kg/m², American Society of Anesthesiologists class ≥3, pulmonary disease, hypertension, steroid use, dependent functional status, and discharge to a facility on multivariate analysis. Ten percent of patients were readmitted after hip fracture repair in this national sample. Preoperative time to surgery, anesthesia type, and implant selection are 3 risk factors for increased LOS that can potentially be modified. A clinically significant risk factor for readmission was body mass index ≥35 kg/m², which was not associated with increased postoperative LOS. The identified risk factors illuminate opportunities for optimizing care for hip fracture patients aged 70 and older. Prognostic Level II. See Instructions for Authors for a complete description of levels of evidence.

Psychological

Title: Severity of cognitive impairment as a prognostic factor for mortality and functional recovery of geriatric patients with hip fracture.

Citation: Geriatrics & gerontology international, Mar 2015, vol. 15, no. 3, p. 289-295 (March 2015)

Author(s): Tarazona-Santabalbina, Francisco José, Belenguer-Varea, Ángel, Rovira Daudi, Eduardo, Salcedo Mahiques, Enmanuel, Cuesta Peredó, David, Doménech-Pascual, Juan Ramón, Gac Espínola, Homero, Avellana Zaragoza, Juan Antonio

Abstract: To identify how the severity of dementia influences functional recovery and mortality in elderly patients hospitalized for hip fracture. An observational retrospective study of 1258 patients aged older than 69 years and diagnosed with hip fracture who received care within an orthogeriatrics unit from 2004 to 2008 was carried out. During a 12-month follow-up period, functional recovery and mortality outcomes were measured. Dementia was present in 383 (28.1%) patients: it was mild in 183 (48%), moderate in 102 (26.5%) and severe in 98 (25.5%). Compared with
patients with preserved cognitive status, patients with dementia had the following statistically
significant differences (means [standard deviation] or percentage): older age (preserved, 82.29 years [6.5 years]; mild, 83.63 years [6.1 years]; moderate, 83.47 years [5.9 years]; severe, 84.46 years [6.1 years]; P


Citation: Journal of the American Medical Directors Association, Mar 2015, vol. 16, no. 3, p. 215-220 (March 2015)

Author(s): Uriz-Otano, Francisco, Uriz-Otano, Juan Isidro, Malafarina, Vincenzo

Abstract: To assess factors associated with functional recovery and determine the influence of cognitive impairment. Prospective cohort study. Orthogeriatric rehabilitation ward. A total of 314 older adults (≥65 years) admitted for rehabilitation after a hip operation. Patients were stratified according to the Mini Mental State Examination into the following categories: severe cognitive impairment, scores 0 to 15; mild cognitive impairment, scores 16 to 23; and no cognitive impairment, scores ≥24. Their functional status, in terms of activities of daily living (ADLs), was recorded, and their ability to walk was measured with the Functional Ambulation Categories at 3 points in time: basal, on admission, and on discharge. We considered recovery of ADLs and ability to walk to be positive responses to rehabilitation treatment. Of the patients included, 285 finished the study (16 patients were moved to another hospital and 13 patients died) and 280 received rehabilitation treatment, with all 3 groups achieving functional gain (P

Title: Recovery of health-related quality of life in a United Kingdom hip fracture population: the Warwick Hip Trauma Evaluation - a prospective cohort study.

Citation: The bone & joint journal, Mar 2015, vol. 97-B, no. 3, p. 372-382 (March 2015)

Author(s): Griffin, X L, Parsons, N, Achten, J, Fernandez, M, Costa, M L

Abstract: Hip fracture is a global public health problem. The National Hip Fracture Database provides a framework for service evaluation in this group of patients in the United Kingdom, but does not collect patient-reported outcome data and is unable to provide meaningful data about the recovery of quality of life. We report one-year patient-reported outcomes of a prospective cohort of patients treated at a single major trauma centre in the United Kingdom who sustained a hip fracture between January 2012 and March 2014. There was an initial marked decline in quality of life from baseline measured using the EuroQol 5 Dimensions score (EQ-5D). It was followed by a significant improvement to 120 days for all patients. Although their quality of life improved during the year after the fracture, it was still significantly lower than before injury irrespective of age group or cognitive impairment (mean reduction EQ-5D 0.22; 95% confidence interval (CI) 0.17 to 0.26). There was strong evidence that quality of life was lower for patients with cognitive impairment. There was a mean reduction in EQ-5D of 0.28 (95% CI 0.22 to 0.35) in patients
**Other**

**Title:** Budget impact analysis of warfarin reversal therapies among hip fracture patients in Finland.

**Citation:** Drugs in R&D, Mar 2015, vol. 15, no. 1, p. 155-162 (March 2015)

**Author(s):** Purmonen, Timo, Törmälehto, Soili, Säävuori, Niina, Kokki, Hannu

**Abstract:** Hip fractures require operation within 36-48 h, and they are most common in the elderly. A high International Normalized Ratio should be corrected before surgery. In the current study, we analyzed the budget impact of various warfarin reversal approaches. Four reversal strategies were chosen for the budget impact analysis: the temporary withholding of warfarin, administration of vitamin K, fresh frozen plasma (FFP), and a four-factor prothrombin complex concentrate (PCC). We estimated that, annually, 410 hip fracture patients potentially require warfarin reversal in Finland. The least costly treatment was vitamin K, which accounted for 289,000 in direct healthcare costs, and the most costly treatment option was warfarin cessation, which accounted for 1,157,000. In the budget impact analysis, vitamin K, PCC and FFP would be cost-saving to healthcare compared with the current treatment mix. The various warfarin reversal strategies have different onset times, which may substantially impact the subsequent healthcare costs.

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**Title:** Length of sick leave as a risk marker of hip fracture: a nationwide cohort study from Sweden.

**Citation:** Osteoporosis International: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA, Mar 2015, vol. 26, no. 3, p. 943-949 (March 2015)

**Author(s):** Stenholm, S, Vahtera, J, Kjeldgård, L, Kivimäki, M, Alexanderson, K

**Abstract:** Sickness absence is a risk marker for future health outcomes, but no previous studies have examined its association with osteoporotic fractures in old age. The results of this prospective population-based cohort study based on Swedish registers suggest that sickness absence is associated with higher risk of hip fracture. Number of sick leave days is a risk marker for future health outcomes, but few studies have examined its association with major public health concerns in old age, such as osteoporotic fractures. The aim of this prospective, nationwide, population-based cohort study based on Swedish registers was to investigate the association between number of sick leave days and future risk of hip fracture. Participants included were all 983,244 individuals who were living in Sweden on 31 December 1995, aged 50 to 64 years, employed, and with no previous hip fracture. Those with sick leave days in 1995 were compared to those with no sickness absence. Incidence of hip fracture was followed from 1996 to 2010. According to Cox regression models adjusted for sociodemographic factors and morbidity, being on sick leave more than 3 months, irrespective of cause, was associated with a 2.0-fold (hazard ratio (HR) 1.96, 95 % confidence interval (CI) 1.74-2.20) and 1.4-fold (HR 1.40, 95 % CI 1.27-1.56) increased risk of hip fracture in men and women, respectively. Analyses repeated among those with previous non-hip fractures replicated the
significant associations. This nationwide cohort study suggests that sickness absence in working-age women and men is a risk marker of hip fracture at old ages.

Title: Wintertime surgery increases the risk of conversion to hip arthroplasty after internal fixation of femoral neck fracture.

Citation: Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA, Mar 2015, vol. 26, no. 3, p. 1109-1117 (March 2015)


Abstract: The study demonstrates that wintertime surgeries are associated with impaired fracture healing and increases the risk of conversion to hip arthroplasty after osteosynthesis of femoral neck fracture. Furthermore, the results raise the possibility of association between seasonal changes in vitamin D levels and impaired fracture healing of femoral neck fracture. Although the changes of vitamin D level and calcitropic hormones influencing bone metabolism are seasonal, the effect of seasons on hip fracture healing is unknown. We assessed the effects of seasonal periodicity on conversion to hip arthroplasty after primary osteosynthesis of femoral neck fracture. This nationwide retrospective observational cohort study involved 2779 patients aged ≥60 years who underwent internal screw fixation for primary femoral neck fracture and were discharged in 2000. Cases requiring conversion to arthroplasty during the 8-year follow-up derived from the Hungarian health insurance database were registered. Risk factors assessed included sex, age, fracture type, season of primary surgery and surgical delay. Competing-risks regression analysis was used for data analyses. During the observation period, 190 conversions to hip arthroplasty (6.8 %) were identified, yielding an overall incidence of 19.5 per 1000 person-years. The crude incidence rates of conversions after osteosynthesis in winter, spring, summer and fall were 28.6, 17.8, 16.9 and 14.7 per 1000 person-years, respectively. Besides younger age, female sex and intracapsular fracture displacement, wintertime primary osteosynthesis significantly increased the risk of conversion (fall vs. winter, hazard ratio (HR): 0.50, 95 % confidence interval [95 % CI 0.33-0.76]; spring vs. winter, HR: 0.63, [95 % CI 0.44-0.92]; summer vs. winter, HR: 0.62, [95 % CI 0.42-0.91]). Our study demonstrate that wintertime primary osteosynthesis increases the risk of conversion surgeries. The results may help improving the outcome of primary fixation of femoral neck fractures.

Title: Are low-energy open ankle fractures in the elderly the new geriatric hip fracture?

Citation: The Journal of foot and ankle surgery : official publication of the American College of Foot and Ankle Surgeons, Mar 2015, vol. 54, no. 2, p. 203-206 (2015 Mar-Apr)

Author(s): Toole, William P, Elliott, Mark, Hankins, David, Rosenbaum, Corey, Harris, Anthony, Perkins, Christopher
Abstract: As the geriatric population in the United States continues to increase, ankle fractures in the elderly are predicted to exponentially increase in the future. As such, these injuries will become a common injury seen by physicians in various fields. Currently, no studies discussing low-energy open ankle fractures in the elderly and/or the mortality rate associated with these devastating injuries have been published. The purpose of the present study was to retrospectively review the mortality rate associated with low-energy open ankle fractures in the elderly. We retrospectively identified 11 patients >60 years old who had sustained low-energy open ankle fractures and been treated at our institution. The patient demographics, mechanism of injury, wound size, medical comorbidities, treatment, follow-up data, and outcomes were recorded. Low-energy falls were defined as ground level falls from sitting or standing. The mean age of the patients was 70.72 years, with a mean body mass index of 35.93 ± 10.24. Of the 11 patients, 9 (81.81%) had ≥3 comorbidities (i.e., hypertension, diabetes, coronary artery disease, congestive heart failure, and/or chronic obstructive pulmonary disease). The mean size of the medially based ankle wound was 14.18 ± 4.12 cm; 10 (90.90%) were Gustilo and Anderson grade IIIA open ankle fractures. In our study, low-energy open ankle fractures in the elderly, very similar to hip fractures, were associated with a high mortality incidence (27.27%) at a mean of 2.67 ± 2.02 months, and 81.81% of our patients had ≥3 medical comorbidities. Copyright © 2015 American College of Foot and Ankle Surgeons. Published by Elsevier Inc. All rights reserved.
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