

Orthogeriatrics

Current Awareness Newsletter



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The most recent issues of the following journals:

- Bone and Joint Journal (UK)
- Osteoporosis International

If you would like any of the papers in full text then get in touch: Library@uhbristol.nhs.uk

Bone and Joint Journal (UK)

December 2015; 97-B (12)

<http://www.bjj.boneandjoint.org.uk/content/current>

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Osteoporosis International

Vol. 26, iss. 4, April 2015

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New from NICE

No relevant news this month

New From Up-to-Date

[Medical consultation for patients with hip fracture](#)

Authors: R Sean Morrison, MD; Albert L Siu, MD, MSPH

Literature review current through: Nov 2015. | **This topic last updated:** Aug 04, 2015.

INTRODUCTION — A total of 310,000 individuals were hospitalized with hip fractures in the United States in 2003 [1]. Worldwide, the incidence of hip fracture exceeds 1.6 million adults annually [2]. Hip fracture rates among the elderly are declining in the US, possibly due to a concurrent rise in bisphosphonate use [3].

Hip fracture is associated with increased mortality rates for both the short-term (3 to 6 months) and long-term (5 to 10 years) [4]. A meta-analysis of prospective cohort studies found a five- to eight-fold increase in mortality rates within three months of fracture; this comparative increase relative to age-matched controls without a history of hip fracture lessened but persisted ten years following the fracture. Of those who survive to six months, only 60 percent recover their prefracture walking ability and only 50 percent recover their prefracture ability to perform activities of daily living [5].

Hospital readmission rates after initial treatment for hip fracture range from 20 percent within 30 days of discharge (for a predominantly male group of veterans) [6] to 30 percent within six months (for a group predominantly female) [7]. Early readmission correlated with medical comorbidities including fluid and electrolyte problems, renal insufficiency, and underlying cardiac and pulmonary disease [6].

Hip fracture is typically considered a surgical disease. However, medical consultants are almost universally involved in the care of these patients [8]. Medical consultation is associated with improved one year mortality for patients hospitalized with hip fracture [9]. This topic will review the most common decisions that medical consultants are asked to make in the care of the patient with hip fracture. In particular, we will focus on:

- Timing of surgical intervention
- Prophylactic antibiotics
- Thromboembolic prophylaxis
- Prevention and management of delirium
- Assessment for underlying osteoporosis

[Radiologic evaluation of the painful hip in adults](#)

Authors: Cecilia M Jude, MD; Shahla Modarresi, MD

Literature review current through: Nov 2015. | **This topic last updated:** Jun 30, 2015.

INTRODUCTION — The hip is a stable, major weightbearing joint with significant mobility. Hip pain has different etiologies in adults and children. In adults, hip pain may be caused by intraarticular disorders such as avascular necrosis (AVN), arthritis, loose bodies, labral tears; periarticular pathology such as tendinitis and bursitis; or extraarticular conditions such as referred pain from lumbar spine, as well as sacroiliac joint and nerve entrapment syndromes.

Imaging modalities used to evaluate adults with hip pain and the appropriateness of particular studies in different clinical scenarios will be reviewed here. The history and physical examination, which are necessary to develop a differential diagnosis prior to the selection of imaging tests; a general review of imaging tests that are used in the evaluation of bone and joint pain; and imaging modalities used to evaluate the hip in children are presented separately.

[Femoral stress fractures in adults](#)

Author: Jonathan Jackson, MD

Literature review current through: Nov 2015. | **This topic last updated:** Dec 03, 2015.

INTRODUCTION — The femur, as the largest bone in the body, has dozens of muscle origins and insertions [1]. As such, it is prone to stress injury at several locations. Stress injury (including stress reaction and stress fracture) denotes gradual structural compromise (from edema to frank cortical fracture) due to training overload. Stress fractures may be incomplete or complete, and either non-displaced or displaced. Femoral neck stress fractures are considered high-risk for complications, particularly displacement; whereas, femoral shaft stress fractures are low-risk.

This topic is focused on overuse stress injury of the femur in physically active individuals, and will discuss patterns of femoral stress fractures (both epidemiologic and patho-anatomic), examination findings, radiographic assessment, and treatment. Insufficiency fractures in older adult patients, acute traumatic femur fractures, and stress fractures generally are reviewed separately.

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: library@uhbristol.nhs.uk

Medical

Title: Comparison of tip apex distance and cut-out complications between helical blades and lag screws in intertrochanteric fractures among the elderly: a meta-analysis

Citation: Journal of Orthopaedic Science, November 2015, vol./is. 20/6(1062-1069)

Author(s): Li S., Chang S.-M., Niu W.-X., Ma H.

Abstract: Purpose: To investigate whether helical blade implant systems have advantages in terms of tip apex distance (TAD) and cut-out rate in comparison to conventional lag screws for intertrochanteric fractures in a geriatric population. Methods: Relevant articles were sourced from the MEDLINE, Embase, Ovid and Cochrane Library databases from inception through March 2015. All randomized controlled trials (RCTs) comparing outcomes between helical blade and lag screw implant systems were selected. Mean TAD values and reported cut-out complications were noted. Each author independently assessed the relevance of the enrolled studies and the quality of the extracted data. Data were analyzed using R software. Results: Ten studies including 1831 patients were eligible for this review, seven of which were included in a combined analysis of dichotomous outcomes and five in a combined analysis of continuous outcomes. The results revealed that, compared with lag screw implantations, the use of helical blades led to a lower rate of cut-out complications (95 % CI: 0.28-0.96, $P = 0.036$). Patients who experienced cut-out complications had a significantly greater tip apex distance (95 % CI: 0.68-1.34, $P < 0.001$). However, the actual tip apex distances were similar between the screw group and blade group (95 % CI: -0.44-0.79, $P = 0.58$). Conclusions: No difference in TAD values was found between blades and screws. In addition, the cut-out risk in the blade-design group was lower than that of the screw group. Therefore, TAD is not an accurate predictor of cut-out risk.

Title: Elderly osteoporosis suspects without diagnosis-interim data from a german geriatric practice

Citation: Value in Health, November 2015, vol./is. 18/7(A654),

Author(s): Schmid T., Brumme U.M., Kemerle S., Zimmer K.

Abstract: Objectives: Elderly patients are at higher risk for osteoporotic (OP) fractures compared with the general population[1], with low-trauma fractures in elderly patients associated with increased mortality risk.[2] In a high proportion of patients with an OP fracture, OP is previously undiagnosed and no OP-medication initiated[3]. This market-research aimed to assess the OP-risk in geriatric patients without OP-diagnosis. [1] Cooper C et al. (1992): Hip fractures in the elderly: a world-wide projection. *Osteoporosis international*; 2(6):285-289. [2] Bliuc et al.: Mortality risk associated with low-trauma osteoporotic fracture and subsequent fracture in men and women. *JAMA* 2009 Feb 4; 301(5):513-21. [3] Klein S et al.: Osteoporose in Deutschland - Epidemiologie und Versorgung, 56. GMDJ Jahrestagung (2011) Methods: New patients to a German geriatric-practice without OP-diagnosis, completing a questionnaire (QU) with their physician evaluating OP-risk factors determined by the German-S3-OP-guideline[1], e.g. age, gender, BMI, were eligible. A total of 29 questions were assigned 1 or 2 points depending on OP-risk impact (total points: 0 - 31). A score > 3 identified "OP-suspects" who were to be referred to an orthopedist. In orthopedic-confirmed OP-cases, OP-medication was initiated. We present interim data (patients completing the QU from 10/14 to 3/15). [1] <http://www.dvosteologie.org/uploads/Leitlinie%202014/DVO-Leitlinie%20Osteoporose%202014%20Kurzfassung%20und%20Langfassung%2018.%2009.%202014.pdf> Results: Among 53 patients included in the interim analysis, mean age was 78 years and 40 (76%) were post-menopausal women; 23 (43%) had co-existing diabetes and 15 (28%) chronic-renal-insufficiency. One-third (17 [32%]) had experienced > 1 fracture after the age of 50. All 53 patients were identified as "OP-suspects" (mean QU-score, 6.6 points); 29 (55%) scored > 7 points indicating very high OP-risk. To date, 26 patients had returned to the geriatric practice, with 12 (46%) having an orthopedicsconfirmed OP-diagnosis. Conclusions: Our data suggest proactive evaluation and identification of OP is needed in the elderly population, to improve disease management including initiation of therapy as appropriate.

Title: Crisscross-Type screw fixation for transcondylar fractures of distal humerus in elderly patients

Citation: Archives of Orthopaedic and Trauma Surgery, November 2015, vol./is. 135/1, 0936-8051;1434-3916 (22 Nov 2015)

Author(s): Park J.S., Kim Y.T., Choi S.J.

Abstract: Introduction This study presents the outcomes of low transcondylar fractures of the distal humerus treated by closed reduction and internal fixation with two screws in a crisscross orientation. Materials and methods Between 2003 and 2009, ten consecutive elderly patients (1 man and 9 women) with transcondylar fractures of distal humerus (AO

13A2.3) were included in this study. The average age at the time of injury was 72 years (range 63-82). All were closed injuries without nerve injury. The mechanism of the injuries was low-energy fall or slip. Six patients had medical or other systemic diseases. Surgical technique: After a closed reduction of the fracture fragments, two guide wires were inserted in a crisscross orientation; one from the lower lateral edge of the capitellum to the medial cortex of the distal humerus, and the other from the lower medial edge of the trochlea to the lateral cortex of the distal humerus. After drilling, fully threaded cannulated screws (4.5 mm in diameter) were inserted along the each guide wire. Functional outcome was assessed with Mayo Elbow Performance scores. Results The mean operation time was 55 min (range 40-100 min). The average follow-up duration was 26.8 months (range 24-35 months). The mean Mayo Elbow Performance scores were 93.8 (range 90-99). The elbow extension-flexion arc was 12degree-125degree. The mean pronation-supination angle was 74degree-72degree. Conclusion In geriatric patients with transcondylar fractures of the distal humerus, a crisscross fixation with two cannulated screws provides satisfactory results that allow a nearly full range of elbow motion with minimal surgical morbidity.

Title: Endoscopic transantral and transnasal repair of orbital floor fracture with the ballooning technique, and classification and characterization of orbital floor fractures.

Citation: American journal of rhinology & allergy, Nov 2015, vol. 29, no. 6, p. 445-448

Author(s): Park, Il-Ho, Lee, Heung-Man, Yanagi, Kiyoshi

Abstract: The level of difficulty during an endoscopic approach for an inferior orbital fracture depends on the fracture pattern and the presence of a ruptured membrane (orbital periosteum and sinus mucosa). The purpose of our study was to examine fracture patterns according to age group and to determine the relationship between the type of fracture and the type of membrane injury. We reviewed the records of 30 patients who, from 2006 to 2010, underwent endoscopic transantral and transnasal approach with a balloon catheter technique to repair orbital floor fracture. The procedure was done through middle or inferior meatal antrostomy and two small antrostomies made in the anterior wall of the maxillary sinus by using an endoscope and specially designed curved dissectors. There were 3 linear, 20 trapdoor-type and 7 blowout fractures. There was a tendency toward a higher incidence of linear fractures at younger ages and of blowout fractures in older patients. All linear fractures had rupture of both membranes, whereas both membranes were intact in 15 of the 20 patients with trapdoor fractures. Among blowout fractures, there was no membrane rupture in five and both membranes were ruptured in two patients. No patient reported diplopia after fracture repair. Rupture of the periosteum, which makes visualization and reduction of orbital tissue difficult for the surgeon during endoscopic repair of the orbital floor fracture, was observed in 3 of 3 linear fractures and 5 of 20 trapdoor fractures. We found that linear fractures were more common in pediatric patients. Care of pediatric orbital floor fracture requires particular caution.

Title: Definitions of Sarcopenia: Associations with Previous Falls and Fracture in a Population Sample.

Citation: Calcified tissue international, Nov 2015, vol. 97, no. 5, p. 445-452 (November 2015)

Author(s): Clynes, M A, Edwards, M H, Buehring, B, Dennison, E M, Binkley, N, Cooper, C

Abstract: Sarcopenia is common in later life and may be associated with adverse health outcomes such as disability, falls and fracture. There is no consensus definition for its diagnosis although diagnostic algorithms have been proposed by the European Working Group for Sarcopenia in Older People (EWGSOP), the International Working Group on Sarcopenia (IWGS) and the Foundation for the National Institutes of Health Sarcopenia Project (FNIH). More recently, Binkley and colleagues devised a score-based system for the diagnosis of "dysmobility syndrome" in an attempt to combine adverse musculoskeletal phenotypes, including sarcopenia and osteoporosis, in order to identify older individuals at particular risk. We applied these criteria to participants from the Hertfordshire Cohort Study to define their prevalence in an unselected cohort of UK community-dwelling older adults and assess their relationships with previous falls and fracture. Body composition and areal bone mineral density were measured using dual-energy X-ray absorptiometry, gait speed was determined by a 3-m walk test and grip strength was assessed with a Jamar hand-held dynamometer. Researcher-administered questionnaires were completed detailing falls and fracture history. The prevalence of sarcopenia in this cohort was 3.3, 8.3 and 2.0 % using the EWGSOP, IWGS and related definition of FNIH, respectively; 24.8 % of individuals had dysmobility syndrome. Individuals with dysmobility reported significantly higher number of falls (last year and since the age of 45 years) ($p < 0.01$) than those without it, but no increased fracture rate was observed in this group ($p = 0.96$). Those with sarcopenia as defined by the IWGS reported significantly higher falls in the last year and prevalent fractures (falls in the last year: OR 2.51; CI 1.09-5.81; $p = 0.03$; fractures OR 2.50; CI 1.05-5.92; $p = 0.04$) but these significant associations were not seen when the EWGSOP definition was applied. The IWGS definition of sarcopenia appears to be an effective means of identifying individuals at risk of prevalent adverse musculoskeletal events.

Title: Serum Circulating MicroRNAs as Biomarkers of Osteoporotic Fracture.

Citation: Calcified tissue international, Nov 2015, vol. 97, no. 5, p. 495-505 (November 2015)

Author(s): Panach, Layla, Mifsut, Damián, Tarín, Juan J, Cano, Antonio, García-Pérez, Miguel Ángel

Abstract: Osteoporosis is a common skeletal disorder characterized by increased risk of bone fracture (BF) due to fragility. BFs, particularly hip fracture, are a major concern in health care because of the associated morbidity and mortality, mainly in the elderly. Lately the involvement of epigenetic mechanisms in the pathophysiology of many diseases has been recognized. In this context, the identification of microRNAs (miRNAs) specific to BF should represent a substantial step forward in diagnostics and therapeutics. The present study aimed to identify specific miRNAs in osteoporotic BF patients compared to those in osteoarthritic controls. In the profiling stage, total RNA was extracted from serum, two pools were prepared, and then retro-transcribed in triplicate. Levels of 179 serum miRNAs

were analyzed by real-time PCR, and 42 of them showed significance ($P < 0.05$), and 12 passed the false discovery rate test for multiple comparisons. Six miRNAs were selected for the replication stage and individually analyzed in sera from 15 BF patients and 12 controls. Results showed that 3 miRNAs (miR-122-5p, miR-125b-5p, and miR-21-5p) were valuable upregulated biomarkers in BF with respect to controls and, significantly, their levels were not affected by hemolysis. For miR-21-5p, the difference detected between groups was independent of age ($P = 0.005$) and its levels correlated to those of CTx ($r = 0.76$; $P < 0.00001$), a marker of bone resorption. In conclusion, several miRNAs may be biomarkers of BF, particularly miR-21-5p. Further studies are needed in order to better characterize the levels of these miRNAs in other bone diseases and to elucidate the mechanism involved in the association of these three miRNAs with osteoporotic BF.

Title: Cemented Bipolar Hemiarthroplasty Provides Definitive Treatment for Femoral Neck Fractures at 20 Years and Beyond.

Citation: Clinical orthopaedics and related research, Nov 2015, vol. 473, no. 11, p. 3595-3599 (November 2015)

Author(s): von Roth, Philipp, Abdel, Matthew P, Harmsen, W Scott, Berry, Daniel J

Abstract: Displaced femoral neck fractures frequently are treated with bipolar hemiarthroplasties. Despite the frequency with which bipolar hemiarthroplasty is used to treat these fractures, there are few long-term data. We sought to evaluate (1) the cumulative incidence of revision for any reason of bipolar hemiarthroplasties at 20 years, and the proportion of patients who lived more than 20 years who still have the prosthesis in situ from the index arthroplasty, (2) the cumulative incidence of aseptic loosening at 20 years, and (3) the Harris hip score of the surviving patients at long term. We performed 376 cemented bipolar hemiarthroplasties for displaced femoral neck fractures in 359 patients between 1976 and 1985. At a minimum of followup of 20 years (mean, 24 years; range, 20-31 years), 339 of 359 patients (94%) were deceased, leaving 20 patients in the study group. Of those, one patient was confirmed to be lost to followup and two others had radiographic followup only. Three hundred fifty-nine patients (99.2%) (376 of the original 379 hips) were followed until death, revision of the hemiarthroplasty, or for at least 20 years (of clinical followup). Bipolar hemiarthroplasty was performed for displaced femoral neck fractures. Cemented fixation was the standard of care between 1976 and 1985 at our institution. The mean age of the patients at the time of surgery was 79 years (range, 60-99 years). The cumulative incidence of revision, estimated with death as a competing risk, and radiographs were evaluated for signs of aseptic loosening by a surgeon not involved in the clinical care of the patients. Clinical function was evaluated with the Harris hip score. The mean age of the patients at the time of surgery was 79 years. The 20-year cumulative incidence of revision for any reason was 3.5% (95% CI, 1.6%-5.3%). Of the 20 patients who survived more than 20 years, seven had the implant intact. The 20-year cumulative incidence of revision for aseptic loosening was 1.4% (95% CI, 0.2%-2.6%). The mean Harris hip score in patients who were still living and patient who did not have revision surgery was 63 ± 22 , however 13 of the 20 patients had undergone revision surgery. The long-term survivorship of bipolar hemiarthroplasty prostheses used to treat displaced femoral neck fractures in the elderly was high, and the procedure can be considered definitive for the majority of elderly patients

with a femoral neck fracture. In this series, 6% (20 patients, 339 of 359) of the patients survived more than 20 years after treatment of a femoral neck fracture with a bipolar hemiarthroplasty. Of those, 35% (seven of 20) survived with their index prosthesis in situ. Level IV, therapeutic study.

Title: Incidence of Fractures in Patients With Type 2 Diabetes in the SAVOR-TIMI 53 Trial.

Citation: Diabetes care, Nov 2015, vol. 38, no. 11, p. 2142-2150 (November 2015)

Author(s): Mosenzon, Ofri, Wei, Cheryl, Davidson, Jaime, Scirica, Benjamin M, Yanuv, Ilan, Rozenberg, Aliza, Hirshberg, Boaz, Cahn, Avivit, Stahre, Christina, Strojek, Krzysztof, Bhatt, Deepak L, Raz, Itamar

Abstract: Patients with type 2 diabetes have an increased risk of bone fractures, the predisposing factors for which are unknown. Treatment with thiazolidinediones (TZDs) further increases the incidence of osteoporotic fractures. In the Saxagliptin Assessment of Vascular Outcomes Recorded in Patients with Diabetes Mellitus-Thrombolysis in Myocardial Infarction 53 (SAVOR-TIMI 53) trial, fractures were considered an adverse event of special interest, and information regarding fractures was collected. We compared the incidence of fractures among the 8,280 patients who were assigned to treatment with saxagliptin with that in the 8,212 patients who were assigned to placebo. We further analyzed the participants' baseline characteristics and fracture risk. During a median follow-up of 2.1 years, 241 patients (2.9%) in the saxagliptin group and 240 (2.9%) in the placebo group experienced a fracture (hazard ratio [HR] 1.00 [95% CI 0.83-1.19]). Event rates for fractures were the same in both treatment arms: 14.7 per 1,000 patient-years in the entire population and 14.0 in the on-treatment population (first event only). Fracture risk was similar in patients treated with saxagliptin or placebo across different subgroups defined by race, cardiovascular risk, and renal function. A multivariable Cox regression analysis showed that risk of fracture was associated with female sex ($P < 0.0001$), longer diabetes duration ($P < 0.0001$), older age ($P = 0.002$), major hypoglycemic events ($P = 0.01$), noncompliance with study drug ($P = 0.01$), and treatment with TZDs ($P = 0.03$). In a large population of older patients with type 2 diabetes, treatment with saxagliptin was not associated with an increased risk of fractures. The association between longer diabetes duration and increased risk of bone fracture is an intriguing finding. © 2015 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered.

Title: Antihypertensive Medications, Loop Diuretics, and Risk of Hip Fracture in the Elderly: A Population-Based Cohort Study of 81,617 Italian Patients Newly Treated Between 2005 and 2009.

Citation: Drugs & aging, Nov 2015, vol. 32, no. 11, p. 927-936 (November 2015)

Author(s): Corrao, Giovanni, Mazzola, Paolo, Monzio Compagnoni, Matteo, Rea, Federico, Merlino, Luca, Annoni, Giorgio, Mancina, Giuseppe

Abstract: Our objective was to assess the relationship between antihypertensive drugs, loop diuretics, and the risk of hospitalization for hip fracture (HF). We conducted a population-based study in a cohort of 81,617 patients from Lombardy (Italy) aged 70-90 years who were newly treated with antihypertensive agents or loop diuretics between 2005 and 2009. Cases were the 2153 patients who experienced the outcome (hospitalization for HF before 31 December 2012). For each case, up to three controls were randomly selected from the cohort to be matched for sex, age at cohort entry, and date of initial prescription. The case-control and case-crossover designs and the logistic regression for matched sets were used to measure the strength of the association between current use of an antihypertensive drug (within 30 days before the HF hospitalization) and the risk of outcome. Case-control and case-crossover odds ratios (ORs) for current use of loop diuretics were 1.67 (95 % confidence interval [CI] 1.28-2.18) and 1.49 (95 % CI 1.05-2.10), respectively. Among patients aged 81-90 years, case-control and case-crossover ORs were 1.52 (95 % CI 1.04-2.21) and 1.82 (95 % CI 1.10-3.00) for current use of loop diuretics and 1.86 (95 % CI 1.03-3.35) and 1.88 (95 % CI 1.01-3.48) for α -blockers. No other agent was associated with the outcome. Evidence that loop diuretics and α -blockers are associated with a higher risk of HF was consistent in the two observational approaches. Clinicians should carefully consider the risk of falls in their selection of drugs for hypertension and in the clinical use of loop diuretics.

Title: Association of osteolytic lesions, bone mineral loss and trabecular sclerosis with prevalent vertebral fractures in patients with multiple myeloma.

Citation: European journal of radiology, Nov 2015, vol. 84, no. 11, p. 2269-2274

Author(s): Borggrefe, J, Giravent, S, Campbell, G, Thomsen, F, Chang, D, Franke, M,

Abstract: In patients with multiple myeloma (MM), computed tomography is widely used for staging and to detect fractures. Detecting patients at severe fracture risk is of utmost importance. However the criteria for impaired stability of vertebral bodies are not yet clearly defined. We investigated the performance of parameters that can be detected by the radiologist for discrimination of patients with and without fractures. We analyzed 128 whole body low-dose CT of MM patients. In all scans a QCT calibration phantom was integrated into the positioning mat (Image Analysis Phantom[®]). A QCT-software (Structural Insight) performed the volumetric bone mineral density (vBMD) measurements. Description of fracture risk was provided from the clinical radiological report. Suspected progressive disease (PD) was reported by the referring clinicians. Two radiologists that were blinded to study outcome reported on the following parameters based on predefined criteria: reduced radiodensity in the massa lateralis of the os sacrum (RDS), trabecular thickening and sclerosis of three or more vertebrae (TTS), extraosseous MM manifestations (EOM), visible small osteolytic lesions up to a length of 8mm (SO) and osteolytic lesions larger than 8mm (LO). Prevalent vertebral fractures (PVF) were defined by Genant criteria. Age-adjusted standardized odds ratios (sOR) per standard deviation change were derived from logistic regression analysis and area under the curve (AUC) from receiver operating characteristics (ROC) analyses were calculated. ROC curves were compared using the DeLong method. 45%

of the 128 patients showed PVF (29 of 75 men, 24 of 53 women). Patients with PVF were not significantly older than patients without fractures (64.6 ± 9.2 vs. 63.3 ± 12.3 years: mean \pm SD, $p=0.5$). The prevalence of each parameter did not differ significantly by sex. Significant fracture discrimination for age adjusted single models was provided by the parameters vBMD (OR 3.5 [1.4-8.8], AUC=0.64 \pm 0.14), SO (sOR 1.6[1.1-2.2], AUC=0.63 \pm 0.05), LO (sOR 2.1[1.1-4.2] AUC=0.69 \pm 0.05) and RDS (sOR 2.6[1.6-4.7], AUC=0.69 \pm 0.05). Multivariate models of these four parameters showed a significantly stronger association with the development of PVF (AUC=0.80 \pm 0.04) than single variables. TTS showed a significant association with PVF in men (sOR 1.5 [0.8-3.0], AUC=0.63 \pm 0.08), but not in women (sOR 2.3[1.4-3.7], AUC=0.70 \pm 0.07). PD was significantly associated with PVF in women (sOR 1.9[1.1-3.6], AUC=0.67 \pm 0.08) but not in men (sOR 1.4[0.9-2.3], AUC=0.57 \pm 0.07). EOM were not associated with PVF (sOR 1.0[0.4-2.6], AUC=0.51 \pm 0.05). In multiple myeloma, focal skeletal changes in low dose CT scans show a significant association with prevalent vertebral fractures. The combination of large osteolytic lesions and loss in radiodensity as can be detected with simple CT Hounsfield measurements of the os sacrum or BMD measurements showed the strongest association to fractures and may be of value for prospective studies. Copyright © 2015 Elsevier Ireland Ltd. All rights reserved.

Title: Total elbow joint replacement for fractures in the elderly-Functional and radiological outcomes.

Citation: Injury, Nov 2015, vol. 46 Suppl 5, p. S37. (November 2015)

Author(s): Pooley, Joseph, Salvador Carreno, Jordi

Abstract: The purpose of this paper was to review the literature on the treatment of intra-articular fractures of the distal humerus in the elderly in order to evaluate the place for total elbow replacement (TER) in the light of our experience over the past 15 years. A review of the records of 11 consecutive patients over the age of 60 years who underwent primary TER for comminuted fractures of the distal humerus between 1997 and 2011 were reviewed and the surviving patients were interviewed. The Scopus database was used to perform a pragmatic review of the literature published between the mid-1990s and the present-day. At the time of the most recent follow-up 3.5 years following surgery (range: 2-6 years) 7 patients assessed with the Mayo elbow performance index were classified as excellent, 4 were classified as good. There were no complications requiring further procedures encountered. Five surviving patients remain satisfied with the function of their TER. The number of papers recommending TER for treatment of these fractures continues to increase with time. TER is now the treatment of choice for unreconstructable fractures of the distal humerus in the elderly. This option should therefore be available at the time of surgery for all distal humeral fractures in this patient population. A surgical approach other than olecranon osteotomy, which would preclude TER is therefore required. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Perioperative comorbidities and complications among patients undergoing primary total knee arthroplasty: a retrospective analysis and prospective survey.

Citation: Journal of clinical anesthesia, Nov 2015, vol. 27, no. 7, p. 558-565

Author(s): Oviedo Baena, Ana M, Moeschler, Susan M, Smith, Hugh M, Duncan, Christopher M, Schroeder, Darrell R, Kopp, Sandra L

Abstract: To determine the demographic characteristics of patients undergoing primary total knee arthroplasty during the years 1989, 1999, and 2009 at our institution and determine whether their characteristics mirror the changing US demographic characteristics. Retrospective chart review of patients and prospective survey of experienced anesthesia providers in total knee arthroplasty. Tertiary care academic medical center. All patients 18 years and older who underwent unilateral primary total knee arthroplasty in 1989, 1999, and 2009 were identified through the Mayo Clinic Total Joint Registry. For each year, 200 patients were randomly selected. The demographic characteristics, comorbidities, perioperative care, and postoperative outcomes of patients, as well as survey responses from experienced anesthesia providers. During the 3 study years, a total of 591 patients were included for analysis. A statistically significant increase in body mass index (BMI) was observed over time in patients undergoing primary total knee arthroplasty (average BMI, 29.01 in 1989, 31.32 in 1999, and 32.32 in 2009 [P < .001]). Despite the increase in patient comorbidities, the percentage of patients who had postoperative complications decreased over time (P = .003), and postoperative disposition (general medicine ward vs intensive care unit) did not change. Our provider survey received a 76% response rate. In total, 82% of anesthesia providers who responded to the survey perceived that both BMI and the number of comorbidities had increased. Of survey respondents, 67% state that they have modified their perioperative anesthesia care because of changes in body habitus and patient comorbidities. The number of obese patients with comorbidities who present for total knee arthroplasty at our institution has increased over the past 20 years. Despite this fact, a reduction was detected in postoperative complications. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Metabolic analysis of knee synovial fluid as a potential diagnostic approach for osteoarthritis.

Citation: Journal of orthopaedic research : official publication of the Orthopaedic Research Society, Nov 2015, vol. 33, no. 11, p. 1631-1638 (November 2015)

Author(s): Mickiewicz, Beata, Kelly, Jordan J, Ludwig, Taryn E, Weljie, Aalim M, Wiley, J Preston, Schmidt, Tannin A, Vogel, Hans J

Abstract: Osteoarthritis (OA) is a leading cause of chronic joint pain in the older human population. Diagnosis of OA at an earlier stage may enable the development of new treatments to one day effectively modify the progression and prognosis of the disease. In this work, we explore whether an integrated metabolomics approach could be utilized for the diagnosis of OA. Synovial fluid (SF) samples were collected from symptomatic chronic knee OA patients and normal human cadaveric knee joints. The samples were analyzed using (1) H nuclear magnetic resonance (NMR) spectroscopy and gas chromatography-mass

spectrometry (GC-MS) followed by multivariate statistical analysis. Based on the metabolic profiles, we were able to distinguish OA patients from the controls and validate the statistical models. Moreover, we have integrated the (1) H NMR and GC-MS results and we found that 11 metabolites were statistically important for the separation between OA and normal SF. Additionally, statistical analysis showed an excellent predictive ability of the constructed metabolomics model (area under the receiver operating characteristic curve = 1.0). Our findings indicate that metabolomics might serve as a promising approach for the diagnosis and prognosis of degenerative changes in the knee joint and should be further validated in clinical settings. © 2015 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 33:1631-1638, 2015. © 2015 Orthopaedic Research Society. Published by Wiley Periodicals, Inc.

Title: Trabecular bone strength is not an independent predictive factor for dynamic hip screw migration-A prospective multicenter cohort study.

Citation: Journal of orthopaedic research : official publication of the Orthopaedic Research Society, Nov 2015, vol. 33, no. 11, p. 1680-1686 (November 2015)

Author(s): Müller, Marc A, Hengg, Clemens, Krettek, Christian, van der Velde, Detlef, Eberdorfer, Siegfried, Stange, Richard, Hofmann, Gunther O, Platz, Andreas, Suhm, Norbert

Abstract: This study assessed whether mechanically measured trabecular bone strength is an independent predictor of dynamic hip screw (DHS) stability, i.e., DHS migration (DHSM) after the fixation of proximal femoral fractures. One-hundred and seven patients older than 50 years with proximal femoral fractures were included. During fracture fixation, a mechanical probe (DensiProbe™ Hip) was inserted at the site where the DHS tip would ultimately be positioned. Peak torque to breakaway the trabecular bone was measured. Fracture reduction, primary implant position and postoperative DHSM were assessed by radiographs taken postoperatively, at 6 and 12 weeks after surgery. Univariate regression analysis revealed no association between peak torque and DHSM ($R(2) = 0.025$, $p = 0.135$). DHSM correlated with the primary DHS position, i.e., the distance between the DHS and (i) the central femoral neck axis (CNFAD, $R(2) = 0.230$; $p < 0.0001$) and (ii) the apex of the femoral head ($R(2) = 0.110$; $p = 0.001$). DHSM did not correlate with areal BMD of the contralateral proximal femur. Multivariable regression modeling revealed the CNFAD as predictive factor for screw migration. The primary implant position measured by the CNFAD, rather than DensiProbe™ Hip measured bone strength, is an independent predictor of DHSM. © 2015 Orthopaedic Research Society. Published by Wiley Periodicals, Inc. J Orthop Res 33:1680-1686, 2015. © 2015 Orthopaedic Research Society. Published by Wiley Periodicals, Inc.

Title: Indications and Outcomes of Osteoporosis and Bone Modulation Therapies.

Citation: Oral and maxillofacial surgery clinics of North America, Nov 2015, vol. 27, no. 4, p. 567-571

Author(s): Weinerman, Stuart, Usera, Gianina L

Abstract: Osteoporosis is a disorder of bone strength that leads to an increased risk of fractures. It is most commonly seen in patients aged 50 or older, although it can sometimes occur at a younger age if there are other comorbidities present. The most common cause of osteoporosis by far is menopause, although it also occurs in men, usually with higher morbidity rates than those seen in women. There are many treatment options available, such as anabolics and antiresorptives, with many more currently being developed. However, osteoporosis remains grossly unrecognized and untreated, resulting in a significant strain on the American economy. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: The relationship between radiographic parameters and clinical outcome of distal radius fractures in elderly patients.

Citation: Orthopaedics & traumatology, surgery & research : OTSR, Nov 2015, vol. 101, no. 7, p. 827-831 (November 2015)

Author(s): Cai, L, Zhu, S, Du, S, Lin, W, Wang, T, Lu, D, Chen, H

Abstract: Treatment of distal radius fractures in elderly patients is controversial. This study explored the relationship between radiographic parameters and clinical outcomes of patients with distal radius fractures following conservative treatment. The study was done using radiographic measurements of distal radius fractures in elderly patients. Ninety-two active, healthy patients with conservatively managed distal radius fractures were included in the study. Functional and radiographic assessments were made 1 year after injury. Fifty patients who underwent corrective osteotomy comprised the control group. Radiographic parameters and clinical outcomes were compared between the two groups. The correlation coefficients of the radiographic parameters were analysed using multiple regression. Radius height (RH), volar tilt (VT) and Mayo wrist and Disabilities of the Arm, Shoulder and Hand (DASH) scores in the experimental group were significantly superior to those of the control group. There was no significant group difference in radial inclination. Multiple regression analysis revealed that the most important factor affecting functional outcome was RH, followed by VT. RH and VT were significantly correlated with the clinical outcomes of conservative treatment of distal radius fractures. RH should be given foremost consideration in elderly patients. Preoperatively, surgeons should evaluate this parameter carefully and be prepared to treat injuries accordingly. Level IV retrospective study. Copyright © 2015 Elsevier Masson SAS. All rights reserved.

Title: Conservative versus surgical treatment for type II odontoid fractures in the elderly: Grading the evidence through a meta-analysis.

Citation: Orthopaedics & traumatology, surgery & research : OTSR, Nov 2015, vol. 101, no. 7, p. 839-844 (November 2015)

Author(s): Yang, Z, Yuan, Z-Z, Ma, J-X, Ma, X-L

Abstract: Odontoid fractures are common C-spine fractures in the elderly. However, the optimal treatment of odontoid fractures in the elderly is, still subject to controversy. Surgical treatment has several advantages on conservative treatment, such as reduced mortality and lower incidence of non-union. This meta-analysis was performed to identify the efficacy of conservative treatment compared with surgical treatment and provides recommendations for using these procedures to treat type II odontoid fractures in the elderly. A systematic search of all studies published was conducted using the PubMed, EMBASE, OVID, ScienceDirect and Cochrane CENTRAL databases. The randomized controlled trials (RCTs) and non-randomized controlled trials (non-RCTs) that compared conservative treatment with surgical treatment and provided data on clinical effects were identified. The included trials were screened out strictly based on the criterion of inclusion and exclusion. The quality of included trials was evaluated. RevMan 5.1 was used for data analysis. Twelve studies involving 730 patients met the inclusion criteria. There were 441 patients with conservative treatment and 289 with surgical treatment. The results of meta-analysis indicated that no difference with regard to the mortality was noted ($P>0.05$) between the two procedures. However, there was statistically significant difference with respect to the non-union numbers ($P<0.05$) between the two procedures. Conservative treatment and surgical treatment are both effective procedures for treating type II odontoid fractures in the elderly. Compared with surgical treatment, there is no significant difference in mortality; With respect to non-union numbers, conservative treatment numbers are higher than surgical treatment. Due to the poor quality of the evidence currently available, high quality RCTs are required. Level of evidence Level II: low-powered prospective randomized trial meta-analysis. Copyright © 2015 Elsevier Masson SAS. All rights reserved.

Title: Unipolar Versus Bipolar Hemiarthroplasty for Displaced Femoral Neck Fractures in Elderly Patients.

Citation: Orthopedics, Nov 2015, vol. 38, no. 11, p. 697-702 (November 1, 2015)

Author(s): Zhou, Zhiping, Yan, Fei, Sha, Weiping, Wang, Liming, Zhang, Xingxiang

Abstract: EDUCATIONAL OBJECTIVES As a result of reading this article, physicians should be able to: 1. Discuss the treatment of femoral neck fractures in elderly patients. 2. State the indications for hemiarthroplasty. 3. Describe the advantages and disadvantages of unipolar and bipolar femoral head replacement. 4. Discuss progress regarding clinical comparative studies of femoral head replacement. Hip replacement using hemiarthroplasty (HA) is a common surgical procedure in elderly patients with femoral neck fractures. However, questions remain regarding the choice of unipolar or bipolar HA. A meta-analysis of randomized, controlled trials (RCTs) was performed to determine whether bipolar HA was associated with lower rates of dislocation, reoperation, acetabular erosion, mortality, and general complications, as well as lower Harris Hip Scores, compared with unipolar HA. The authors searched PubMed and the Cochrane Register of Controlled Trials database, and 8 RCTs (including a total of 1100 patients) were selected for meta-analysis. Risk ratios (RRs) and weighted mean differences (WMDs) from each trial were pooled using random-effects

or fixed-effects models depending on the heterogeneity of the included studies. There were no differences in dislocation (RR=1.20; 95% confidence interval [CI], 0.47 to 3.07), reoperation (RR=0.64; 95% CI, 0.33 to 1.26), acetabular erosion (RR=2.29; 95% CI, 0.85 to 6.12), mortality (RR=0.85; 95% CI, 0.63 to 1.13), and general complications (RR=1.05; 95% CI, 0.70 to 1.56). The authors found no difference in postoperative Harris Hip Scores between patients undergoing unipolar vs bipolar HA (WMD=-1.32; 95% CI, -3.29 to 0.65; P=.19). Unipolar and bipolar HA achieved similar clinical outcomes in patients with displaced femoral neck fractures. [Orthopedics. 2015; 38(11):697-702.]. Copyright 2015, SLACK Incorporated.

Title: Long-term Results After Ankle Syndesmosis Injuries.

Citation: Orthopedics, Nov 2015, vol. 38, no. 11, p. e1001. (November 1, 2015)

Author(s): van Vlijmen, Nicole, Denk, Katharina, van Kampen, Albert, Jaarsma, Ruurd L

Abstract: Syndesmotic disruption occurs in more than 10% of ankle fractures. Operative treatment with syndesmosis screw fixation has been successfully performed for decades and is considered the gold standard of treatment. Few studies have reported the long-term outcomes of syndesmosis injuries. This study investigated long-term patient-reported, radiographic, and functional outcomes of syndesmosis injuries treated with screw fixation and subsequent timed screw removal. A retrospective cohort study was carried out at a Level I trauma center. The study group included 43 patients who were treated for ankle fractures with associated syndesmotic disruptions between December 2001 and May 2011. The study included case file reviews, self-reported questionnaires, radiologic reviews, and clinical assessments. At 5.1 (± 1.76) years after injury, 60% of participants had pain, 26% had degenerative changes, 51% had loss of tibiofibular overlap, and 33% showed medial clear space widening. Retained syndesmotic positions on radiographs were linked to better self-reported outcomes. There is an inversely proportional relation between age at the time of injury and satisfaction with the outcome of the ankle fracture as well as a directly proportional relation between age at the time of injury and pain compared with the preinjury state. Optimal restoration and preservation of the syndesmosis is crucial. Syndesmotic disruption is associated with poor long-term outcomes after ankle fracture. Greater age is a risk factor for chronic pain and dissatisfaction with the outcome of ankle fracture and syndesmosis injury. Therefore, patient education to facilitate realistic expectations about recovery is vital, especially in older patients. [Orthopedics. 2015; 38(11):e1001-e1006.]. Copyright 2015, SLACK Incorporated.

Title: Cemented versus uncemented arthroplasty in patients with a displaced fracture of the femoral neck: a randomised controlled trial.

Citation: The bone & joint journal, Nov 2015, vol. 97-B, no. 11, p. 1475-1480

Author(s): Inngul, C, Blomfeldt, R, Ponzer, S, Enocson, A

Abstract: The aim of this randomised controlled study was to compare functional and radiological outcomes between modern cemented and uncemented hydroxyapatite coated stems after one year in patients treated surgically for a fracture of the femoral neck. A total of 141 patients aged > 65 years were included. Patients were randomised to be treated with a cemented Exeter stem or an uncemented Bimetric stem. The patients were reviewed at four and 12 months. The cemented group performed better than the uncemented group for the Harris hip score (78 vs 70.7, $p = 0.004$) at four months and for the Short Musculoskeletal Function Assessment Questionnaire dysfunction score at four (29.8 vs 39.2, $p = 0.007$) and 12 months (22.3 vs 34.9, $p = 0.001$). The mean EQ-5D index score was better in the cemented group at four (0.68 vs 0.53, $p = 0.001$) and 12 months (0.75 vs 0.58, $p = < 0.001$) follow-up. There were nine intra-operative fractures in the uncemented group and none in the cemented group. In conclusion, our data do not support the use of an uncemented hydroxyapatite coated stem for the treatment of displaced fractures of the femoral neck in the elderly. Cite this article: Bone Joint J 2015;97-B:1475-80. ©2015 The British Editorial Society of Bone & Joint Surgery.

Title: Surgical Treatment of Pediatric Craniofacial Fractures: A National Perspective.

Citation: The Journal of craniofacial surgery, Nov 2015, vol. 26, no. 8, p. 2375-2380

Author(s): Massenburg, Benjamin B, Sanati-Mehrizy, Paymon, Taub, Peter J

Abstract: Head trauma is the most common cause of death because of injury in children, and trauma alone is the leading cause of morbidity and mortality in pediatrics. This study aimed to characterize the demographics and economic burden associated with the surgical and nonsurgical repair of craniofacial fractures in the pediatric inpatient population in the United States. A retrospective cohort study was performed using the 2012 Kids' Inpatient Database which identified 20,070 patients who had a skull or facial fracture, of whom 6395 (31.9%) were treated surgically. Epidemiologic patient and hospital data were analyzed as potential determinants of surgical treatment, prolonged hospitalizations, and higher charges. Pediatric craniofacial fractures are estimated to represent \$1.2 billion of national healthcare expenditures annually. The average patient charge for surgical treatment of a craniofacial fracture in the pediatric population is \$84,849 compared with \$52,490 for nonsurgical management ($P < 0.001$), and the average length of stay was longer for surgical repair when compared with nonsurgical management for craniofacial fractures (5.3 days versus 4.6 days, $P < 0.001$). Patients who were older, African American, had nonprivate insurance, whose fracture was caused by external trauma, and who were treated in an urban hospital had an independently increased likelihood of surgical repair of craniofacial fractures. Patients who were older, female, insured, of lower income brackets, whose fracture was caused by a motor vehicle accident, who had surgical treatment of their craniofacial fracture, and who were treated in hospitals in the South, Midwest, or West, teaching hospitals, and government-owned hospitals had an independent risk for a prolonged hospitalization. Patients who were older, Caucasian, insured, whose fracture was caused by a motor vehicle accident, and who were treated in hospitals in the South, teaching hospitals, pediatric hospitals, larger hospitals, and government-owned hospitals had an independent risk for increased patient charges. Craniofacial fractures in the pediatric

population represent a large economic burden to the patient and family, as well as the healthcare system as a whole. The identified patient and hospital demographics that are associated with prolonged hospital stays and higher patient charges may represent potential barriers to care, and additional research to elucidate these factors is warranted.

Title: The Effect of a Bone Tunnel During Ligament Reconstruction for Trapeziometacarpal Osteoarthritis: A 5-Year Follow-up.

Citation: The Journal of hand surgery, Nov 2015, vol. 40, no. 11, p. 2214-2222

Author(s): Spekrijse, Kim R, Vermeulen, Guus M, Kedilioglu, Muhammed A, Slijper, Harm P, Feitz, Reinier, Hovius, Steven E, Selles, Ruud W

Abstract: To compare in trapeziometacarpal (TMC) osteoarthritis the effects of trapeziectomy with tendon interposition and ligament reconstruction (LRTI) with or without a bone tunnel after a mean follow-up of 5 years. We randomized 79 women (aged 40 years or older) with stage IV TMC osteoarthritis to either trapeziectomy with LRTI using a bone tunnel (Burton-Pellegrini) or a tendon sling arthroplasty (Weilby). Before surgery and at 3 months and 1 year after surgery, patients were evaluated for pain, function, strength, satisfaction, and complications. Of these patients, 72% were evaluated after a mean follow-up of 5 years (range, 3.8-6.4 years). There were no significant differences in function and pain (Patient-Rated Wrist and Hand Evaluation) between treatment groups after a mean follow-up of 5 years. In addition, grip and pinch strength, satisfaction, and persisting complications did not differ between groups. Three patients in the Weilby group had repeat surgery (2 for symptomatic scaphotrapezoidal osteoarthritis and 1 elsewhere) and one in the Burton-Pellegrini group operated on again elsewhere. Furthermore, 3 patients who were first conservatively treated for a trigger finger or neuroma were operated on again because conservative therapy failed. Two more patients were operated on again because of de Quervain tendinitis and carpal tunnel syndrome. The overall treatment effect of both groups together showed no significant differences between results at 1 and 5 years after surgery, except for grip strength, which improved for both groups. This study showed that improved function, strength, and satisfaction obtained at 1 year after trapeziectomy with LRTI with or without the use of a bone tunnel for stage IV TMC thumb osteoarthritis was maintained after 5 years. Therapeutic I. Copyright © 2015 American Society for Surgery of the Hand. Published by Elsevier Inc. All rights reserved.

Patient care and management

Title: Age as a predictor of rescue opioid administration immediately after the emergence of general anesthesia

Citation: Journal of Clinical Anesthesia, November 2015, vol./is. 27/7(537-542)

Author(s): Ladha K.S., Wanderer J.P., Nanji K.C.

Abstract: Background and objectives While previous studies have shown that elderly patients require lower dosages of opioids, the literature suggests that pain is undertreated in the geriatric population, which may lead to postoperative pain and high rescue analgesia requirements. The purpose of this study is to determine whether elderly patients undergoing hip and knee arthroplasty require higher levels of postoperative rescue opioids than their younger counterparts early after emergence from anesthesia. Methods Using a nonconcurrent retrospective cohort study design, patients who underwent hip or knee arthroplasty under general anesthesia at a tertiary academic hospital from 2007 to 2012 were identified. Demographic information and data regarding patients' anesthetic care were obtained from the institution's anesthesia information management system. To assess the presence of pain after the emergence of anesthesia, we used, as a proxy, opioid administration by the anesthesia provider after leaving the operating room and before the end of anesthesia care. Results A total of 2731 patients met inclusion criteria, of which 487 (17.8%) received rescue opioids. Patients older than 80 years were less likely to receive opioids after leaving the operating room (odds ratio, 0.57; 95% confidence interval, 0.37-0.88; $P = .01$) and received 1.37 mg less of hydromorphone equivalent opioid compared to patients younger than the age of 50 years (95% confidence interval, 1.18-1.55; $P < .001$). The proportion of patients who received rescue opioids varied significantly between anesthesia providers from 0% to 38% ($P < .001$). Conclusions While elderly patients received lower doses of opioids intraoperatively, they were less likely to require rescue analgesia. The variability among providers in rescue opioid administration after emergence presents an opportunity for further research.

Title: Pain and falls and fractures in community-dwelling older men.

Citation: Age and ageing, Nov 2015, vol. 44, no. 6, p. 973-979 (November 2015)

Author(s): Munch, Troels, Harrison, Stephanie L, Barrett-Connor, Elizabeth, Lane, Nancy E,

Abstract: pain may reduce stability and increase falls and subsequent fractures in older men. to examine the association between joint pain and any pain with falls, hip and non-spine fractures in older community-dwelling men. a cohort study. analyses included 5,993 community-dwelling men aged ≥ 65 years from the MrOS cohort. pain at hip, knee and elsewhere (any) was assessed by self-report. Men reported falls via questionnaires mailed 3 \times per year during the year following the baseline visit. Fractures were verified centrally. Mean follow-up time for fractures was 9.7 (SD 3.1) years. Logistic regression models estimated likelihood of falls and proportional hazards models estimated risk of fractures. Models were adjusted for age, BMI, race, smoking, alcohol use, medications use, co-morbidities and arthritis; fracture models additionally adjusted for bone mineral density. one quarter (25%, $n = 1,519$) reported ≥ 1 fall; 710 reported ≥ 2 falls in the year after baseline. In multivariate models, baseline pain at hip, knee or any pain increased likelihood of ≥ 1 fall and ≥ 2 falls over the following year. For example, knee pain increased likelihood of ≥ 1 fall (odds ratio, OR 1.44; 95% confidence interval, CI 1.25-1.65) and ≥ 2 falls (OR 1.75; 95% CI 1.46-2.10). During follow-up, 936 (15.6%) men suffered a non-spine fracture ($n = 217$, 3.6% hip). In multivariate models, baseline pain was not associated with incident hip or non-spine fractures. any pain, knee pain and hip pain were each strong independent risk factors

for falls in older men. Increased risk of falls did not translate into an increased risk of fractures. © The Author 2015. Published by Oxford University Press on behalf of the British Geriatrics Society. All rights reserved. For Permissions, please email: journals.permissions@oup.com

Title: Outcome of the Stryker® Trident 'All-Poly' constraint acetabular insert: a district general hospital experience.

Citation: Hip international : the journal of clinical and experimental research on hip pathology and therapy, Nov 2015, vol. 25, no. 6, p. 557-562 (November 25, 2015)

Author(s): Harrison, Simon J, Leeder, Daniel J, McWilliams, Timothy G, Metcalf, Robert W,

Abstract: Constrained acetabular inserts are designed as revision solutions for unstable total hip arthroplasties to prevent dislocation and as a possible primary option for elderly patients at risk of recurrent dislocation. Our aim was to establish clinical and radiological outcomes of an 'all-poly' constrained acetabular device and to highlight reasons for component failure. We retrospectively reviewed our use of the Stryker® Trident 'all-poly' constrained acetabular insert between 2008 and 2013. All inserts were cemented directly into the acetabulum. Demographic data was collated. The indication for use of a constrained insert and postoperative complications were determined. Patients were reviewed clinically and underwent radiographic follow-up. A total of 56 constrained inserts were utilised during the study period. Follow-up was for a minimum of 2 years (mean 4.0 years and range 2.0-6.8 years). The mean latest follow-up Oxford hip score was 34.6 (11-48). One postoperative superficial wound infection, 1 breakage of the constraining ring without clinical consequence and 1 recognised complication of liner failure at the bipolar interface were noted. In the short to medium term, acetabular constraint offers a useful primary or revision option in patients at risk or with recurrent dislocation.

Title: Outcome of in-patient falls in hospitals with 100% single rooms and multi-bedded wards.

Citation: Age and ageing, Nov 2015, vol. 44, no. 6, p. 1032-1035 (November 2015)

Author(s): Singh, Inderpal, Okeke, Justin, Edwards, Chris

Abstract: falls in hospital account for almost two-fifths of the patient safety incidents reported to the National Reporting and Learning System in UK. Studies have suggested an increased incidence of falls in single-bedded hospitals. to compare the outcome of in-patient falls occurring in units with 100% single rooms (SRs) and multi-bedded wards (M-BWs). SAMPLING DESIGN AND METHODS: an observational study. Retrospective standard incident reporting data (DATIX) on in-patient falls and associated injury were obtained from both sites over 18 months each. There was no change in demographics, size and characteristics of population except change in the geography of new hospitals. the total number of in-patient fall incidents reported over the 3 years was 1,749. The mean age of patients on M-BW and SR sites was 81.0 ± 2.4 (51.3% females) and 80.3 ± 10.3 (50.7%

females), respectively. The mean incidence of falls/1,000 patient-bed days on M-BW and SR sites was 5.44 ± 4.76 and 15.82 ± 19.56 , respectively ($P < 0.01$). Overall fracture incidence/1,000 patient-bed days on M-BW and SR sites was 0.07 ± 0.48 and 0.36 ± 1.52 ($P < 0.01$), respectively. The hip fracture incidence/1,000 patient-bed days on M-BW and SR sites was 0.04 ± 0.38 and 0.15 ± 1.00 ($P < 0.01$), respectively. One-year mortality from the date of first incident fall was lower in M-BWs (41.1%) compared with SRs (47.1%), but this is not significant ($P = 0.12$). This observational study shows a significantly increased incidence of falls and fracture in a hospital design with SRs compared with a multi-bedded facility. Consideration should be given to increased incidence of falls and falls-related injury in SRs when deciding on the percentage of single-room provision in new hospitals to admit frail older adults. © The Author 2015. Published by Oxford University Press on behalf of the British Geriatrics Society. All rights reserved. For Permissions, please email: journals.permissions@oup.com.

Title: Tuberosity healing after reverse shoulder arthroplasty for acute proximal humerus fractures: the "black and tan" technique.

Citation: Journal of shoulder and elbow surgery / American Shoulder and Elbow Surgeons ... [et al.], Nov 2015, vol. 24, no. 11, p. e299. (November 2015)

Author(s): Formaini, Nathan T, Everding, Nathan G, Levy, Jonathan C, Rosas, Sam

Abstract: Reverse shoulder arthroplasty has seen increased use for management of complex proximal humeral fractures in the elderly. Recent evidence has shown that tuberosity healing leads to improved active range of motion and functional outcomes. The purpose of this study was to report on the radiographic and clinical outcomes of a consecutive series of patients having undergone reverse shoulder arthroplasty for fracture utilizing the "black and tan" method—a hybrid cementation-impaction grafting technique that uses autogenous cancellous bone graft to create an interface between the proximal cement mantle and the area of tuberosity repair. Twenty-five patients (average age, 77 years; range, 63-88 years) were included in the analysis with a mean follow-up of 17 months. All patients underwent reverse shoulder arthroplasty for a complex proximal humerus fracture using the black and tan technique. The tuberosity healing rate was 88%. At final follow-up, mean active elevation was $117^\circ \pm 23^\circ$, mean abduction was $86^\circ \pm 16^\circ$, and mean external rotation was $29^\circ \pm 18^\circ$. External rotation strength averaged 4.9 ± 0.2 . The Simple Shoulder Test and Single Assessment Numeric Evaluation scores averaged 7 and 76, respectively. The mean American Shoulder and Elbow Surgeons total score was 71; visual analog scale score for pain, 2; and visual analog scale score for function, 7. Of the 25 patients, 21 (84%) rated their satisfaction with the surgery as excellent or good. The black and tan technique together with standard suture repair and an implant with features that support tuberosity repair results in a high tuberosity healing rate with restoration of external rotation after reverse shoulder arthroplasty for fracture. Copyright © 2015 Journal of Shoulder and Elbow Surgery Board of Trustees. Published by Elsevier Inc. All rights reserved.

Title: Association between dementia and postoperative complications after hip fracture surgery in the elderly: analysis of 87,654 patients using a national administrative database.

Citation: Archives of orthopaedic and trauma surgery, Nov 2015, vol. 135, no. 11, p. 1511-1517 (November 2015)

Author(s): Tsuda, Yusuke, Yasunaga, Hideo, Horiguchi, Hiromasa, Ogawa, Sumito, Kawano, Hirotaka, Tanaka, Sakae

Abstract: Mortality following hip fracture surgery is higher in patients with dementia than those without; however, few large-scale studies have investigated postoperative in-hospital complications in such patients. The aim of this study was to elucidate the complications that occur after hip fracture surgery in patients with and without dementia using a large national database. We retrospectively identified patients aged ≥ 70 years who underwent hemiarthroplasty, osteosynthesis for femoral neck fracture or osteosynthesis for intertrochanteric fracture, and compared the occurrence of postoperative complications between patients with and without dementia. Multivariate logistic regression analysis was performed to adjust for patient characteristics and hospital factors. A total of 87,654 patients were included in this study, including 9419 with dementia. Compared with the non-dementia group, the dementia group showed a higher incidence of overall postoperative complications [odds ratio (OR) 1.45; $p < 0.001$], surgical site infection (OR 1.58; $p = 0.004$), urinary tract infection (OR 1.87; $p < 0.001$) and respiratory complications (OR 1.49; $p < 0.001$). The rate of postoperative complications was higher for all types of hip fracture surgery. The occurrence of a postoperative complication was significantly higher in patients aged ≥ 80 years (OR 1.37; $p < 0.001$) and those with dementia (OR 1.45; $p < 0.001$), any type of malignancy (OR 1.42; $p < 0.001$), a history of cardiovascular disease (OR 1.33; $p < 0.001$), a history of cerebrovascular disease (OR 1.15; $p = 0.029$), chronic renal failure (OR 1.36; $p < 0.001$), liver cirrhosis (OR 1.41; $p < 0.001$) or blood transfusion after surgery (OR 1.49; $p < 0.001$). Our results highlight the need to pay particular attention to surgical site infection, urinary tract infection and respiratory complications in patients with preoperative dementia after hip fracture surgery. These results provide additional useful evidence to inform the management of these patients.

Title: Omission of Physical Therapy Recommendations for High-Risk Patients Transitioning From the Hospital to Subacute Care Facilities.

Citation: Archives of physical medicine and rehabilitation, Nov 2015, vol. 96, no. 11, p. 1966

Author(s): Polnaszek, Brock, Mirr, Jacquelyn, Roiland, Rachel, Gilmore-Bykovskiy, Andrea, Hovanes, Melissa, Kind, Amy

Abstract: To assess the quality and explore the potential impact of the communication of physical therapy (PT) recommendations in hospital discharge summaries/orders for high-risk subacute care populations, specifically targeting recommendations for (1) maintenance of patient safety, (2) assistance required for mobility, and (3) use of assistive devices. Medical

record abstraction of retrospective cohort comparing discharge recommendations made by inpatient PT to orders included in written hospital discharge summaries/orders, the primary form of hospital-to-subacute care communication. Data were linked to Medicare outcomes from corresponding years for all Medicare beneficiaries in the cohort. Academic hospital. All hospitalized patients (N=613 overall) 18 years and older with primary diagnoses of stroke or hip fracture, with an inpatient PT consultation and discharged to subacute care during the years 2006 to 2008; 366 of these were Medicare beneficiaries. Not applicable. Combined rehospitalization, emergency department visit, and/or death within 30 days of discharge. Omission of recommendations for maintaining patient safety occurred in 54% (316/584) of patients; for assistance required for mobility, in approximately 100% (535/537); and for use of assistive devices, in 77% (409/532). As compared with those without patient safety restriction/precaution omissions, Medicare beneficiaries with such omissions demonstrated a trend toward more negative 30-day outcomes (26% vs 18%, $P=.10$). Similar, albeit nonsignificant, outcome trends were observed in the other omission categories. PT recommendations made during a hospital stay in high-risk patients are routinely omitted from hospital discharge communications to subacute care facilities. Interventions to reliably improve this communication are needed. Copyright © 2015 American Congress of Rehabilitation Medicine. Published by Elsevier Inc. All rights reserved.

Title: Emerging therapeutic concepts for muscle and bone preservation/building.

Citation: Bone, Nov 2015, vol. 80, p. 150-156 (November 2015)

Author(s): Compston, Juliet

Abstract: Loss of muscle or bone mass occurs with ageing, immobility and in association with a variety of systemic diseases. The interaction of these two processes is most evident in the major contribution of falls to the risk of fractures in the elderly population. Exercise and nutrition are key common physiological variables that allow for preservation or formation of greater muscle or bone mass. However, although several pharmacological approaches have the potential to benefit both muscle and bone health, for example vitamin D, selective androgen receptor modulators and ghrelin mimetics, clinical trials with appropriate primary outcomes are lacking. Conventional approaches to address muscle loss are being extended to include stem cell biology and conserved molecular mechanisms of atrophy/hypertrophy. Pharmacological interventions to reduce fracture risk are exploring new mechanisms of action, in particular the uncoupling of bone resorption and formation. Emerging key issues for clinical trial design include adequate phenotyping of patients (personalised medicine), optimisation of the physiological background (multimodal approach) and the use of meaningful and robust outcomes relevant to daily clinical practice. At present, effective treatments that combine beneficial effects on both muscle and bone are lacking, although this is an important target for the future. This review therefore considers current and developing strategies to improve muscle function and bone strength in separate sections. Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Recommendations for assessing and preventing falls in adults of all ages with rheumatoid arthritis.

Citation: British journal of community nursing, Nov 2015, vol. 20, no. 11, p. 529-533, 1462-4753 (November 2015)

Author(s): Stanmore, Emma K

Abstract: Rheumatoid arthritis (RA) is a debilitating disease that affects younger as well as older adults. It is associated with a high risk of injurious falls due to problems such as lower-limb muscle weakness, balance impairment, swollen and tender joints, pain, and fatigue. Falls are typically associated with older people; hence, many professionals do not recognise the risks for younger persons with diseases such as RA. Falls can lead to devastating consequences, such as fatalities, hip fractures (with 50% of those affected never regaining their previous level of mobility and 30% dying within 1 year), or loss of independence and confidence. Research has shown that many people are either unaware or deny their risk of falling. Therefore, it is important that health professionals, such as community nurses, are aware of the risk factors, methods of assessment, and evidence-based preventative measures, so that falls can be avoided in this population. This article presents research and practice implications for community nurses to enable them to assess, treat, and appropriately refer adults with RA who are also at risk of falls.

Title: Which patients need critical care intervention after total joint arthroplasty? : a prospective study of factors associated with the need for intensive care following surgery.

Citation: The bone & joint journal, Nov 2015, vol. 97-B, no. 11, p. 1512-1518

Author(s): Courtney, P M, Melnic, C M, Gutsche, J, Hume, E L, Lee, G-C

Abstract: Older patients with multiple medical co-morbidities are increasingly being offered and undergoing total joint arthroplasty (TJA). These patients are more likely to require intensive care support, following surgery. We prospectively evaluated the need for intensive care admission and intervention in a consecutive series of 738 patients undergoing elective hip and knee arthroplasty procedures. The mean age was 60.6 years (18 to 91; 440 women, 298 men. Risk factors, correlating with the need for critical care intervention, according to published guidelines, were analysed to identify high-risk patients who would benefit from post-operative critical care monitoring. A total of 50 patients (6.7%) in our series required critical care level interventions during their hospital stay. Six independent multivariate clinical predictors were identified ($p < 0.001$) including a history of congestive heart failure (odds ratio (OR) 24.26, 95% confidence interval (CI) 9.51 to 61.91), estimated blood loss > 1000 mL (OR 17.36, 95% CI 5.36 to 56.19), chronic obstructive pulmonary disease (13.90, 95% CI 4.78 to 40.36), intra-operative use of vasopressors (OR 8.10, 95% CI 3.23 to 20.27), revision hip arthroplasty (OR 2.71, 95% CI 1.04 to 7.04) and body mass index > 35 kg/m² (OR 2.70, 95% CI 1.23 to 5.94). The model was then validated against an independent, previously published data set of 1594 consecutive patients. The use of this risk stratification model can be helpful in predicting which high-risk patients would benefit from a higher level

of monitoring and care after elective TJA and aid hospitals in allocating precious critical care resources. Cite this article: Bone Joint J 2015;97-B:1512-18. ©2015 The British Editorial Society of Bone & Joint Surgery.

Title: Pain relief management following proximal femoral fractures: Options, issues and controversies.

Citation: Injury, Nov 2015, vol. 46 Suppl 5, p. S52. (November 2015)

Author(s): Tosounidis, Theodoros H, Sheikh, Hassaan, Stone, Martin H, Giannoudis, Peter V

Abstract: The majority of proximal femoral fractures occur in the elderly population. Safe and adequate pain relief is an integral part of the overall management of hip fractures. Inherent difficulties in the assessment of pain in elderly need to be taken into account and unique considerations should be made regarding the effective analgesia due to different elderly physiology, and their response to trauma and subsequent surgery. The pain management should start as soon as possible and special emphasis should be paid to contemporary methods of regional anaesthesia whilst a multimodal approach should be adopted in the perioperative period. The present review summarises the contemporary treatment options and controversies pertaining to the management of pain in elderly patients with proximal femoral fractures. Copyright © 2015 Elsevier Ltd. All rights reserved.

Title: Prevalence, Timing, Causes, and Outcomes of Hyponatremia in Hospitalized Orthopaedic Surgery Patients.

Citation: The Journal of bone and joint surgery. American volume, Nov 2015, vol. 97, no. 22, p. 1824-1832 (November 18, 2015)

Author(s): Hennrikus, Eileen, Ou, George, Kinney, Bradley, Lehman, Erik, Grunfeld, Robert, Wieler, Jane, Damluji, Abdulla, Davis, Charles, Mets, Berend

Abstract: Hyponatremia is common among orthopaedic patients and is associated with adverse clinical outcomes. We examined the prevalence, timing, causes, and outcomes of hyponatremia in adult hospitalized orthopaedic surgery patients. We evaluated the medical records of 1067 consecutive orthopaedic surgery patients admitted to a tertiary academic institution. The medical records were reviewed to investigate hyponatremia (serum sodium <135 mEq/L) that (1) had been present on hospital admission or (2) had developed postoperatively. The primary outcomes were the prevalence and timing of, and risk factors for, presentation with or development of hyponatremia. Secondary outcomes were hospital length of stay, total hospital cost, and discharge disposition. Multivariable logistic regression models were used to assess the variables associated with hyponatremia and the effects of hyponatremia on clinical outcomes. Of the 1067 patients, seventy-one (7%) had preoperative hyponatremia and 319 (30%) developed hyponatremia postoperatively. Of the latter, 298 (93%) developed hyponatremia within forty-eight hours postoperatively.

Compared with patients with normonatremia, those who presented with hyponatremia, on the average, were older (67.2 versus 60.5 years, $p < 0.001$), had longer hospital stays (4.6 versus 3.3 days, $p < 0.001$), incurred higher hospital costs (\$19,200 versus \$17,000, $p = 0.006$), and were more likely to be discharged to an extended-care facility (odds ratio [OR] = 2.87, $p < 0.001$). Developing hyponatremia postoperatively resulted, on average, in a longer hospital stay (3.7 versus 3.3 days, $p = 0.002$) and greater hospital cost (\$18,800 versus \$17,000, $p < 0.001$). Age (OR = 1.13 per decade, $p = 0.012$), spine surgery (OR = 2.76 versus knee, $p < 0.001$), hip surgery (OR = 1.76 versus knee, $p < 0.001$), and the amount of lactated Ringer solution used (OR = 1.16, $p = 0.002$) increased the risk of developing hyponatremia. Hyponatremia in orthopaedic patients is associated with longer, costlier hospitalizations. The factors that significantly increased the risk of developing postoperative hyponatremia were an older age, spine fusion, hip arthroplasty, and the amount of lactated Ringer solution used. Prognostic Level III. See Instructions for Authors for a complete description of levels of evidence. Copyright © 2015 by The Journal of Bone and Joint Surgery, Incorporated.

Psychological

Title: Delirium detection and improved delirium management in older patients hospitalized for hip fracture.

Citation: International journal of orthopaedic and trauma nursing, Nov 2015, vol. 19, no. 4, p. 214-221 (November 2015)

Author(s): Todd, Kristine S, Barry, Jean, Hoppough, Susan, McConnell, Eleanor

Abstract: Delirium is a common and potentially devastating problem for older patients following hip fracture. Although early detection is recommended, description and evaluation of standardized approaches are scarce. The aims of this quality improvement project were to: (1) implement a clinical algorithm for improving delirium detection and management and (2) assess the impact of the clinical algorithm on length of stay, discharge disposition and patient satisfaction. The pilot study was implemented on an orthopedic unit to evaluate the effectiveness of a clinical protocol for delirium detection and management to improve outcomes. Outcomes of 33 elderly post-operative hip fracture patients were compared to historical controls from the same unit. Delirium was detected in 18% of patients. Length of stay was reduced by 22% ($P < .001$), discharge disposition showed a 13% improvement ($P = .17$) and patient satisfaction scores showed a 15% ($P = .15$) improvement post-intervention. Implementation of a clinical algorithm to promote early detection and treatment of delirium in post-operative hip fracture patients is feasible and associated with improved outcomes. Copyright © 2015 Elsevier Ltd. All rights reserved.

Other

Title: "When Things Are Really Complicated, We Call the Social Worker": Post-Hip-Fracture Care Transitions for Older People.

Citation: Health & social work, Nov 2015, vol. 40, no. 4, p. 257-265, 0360-7283 (November 2015)

Author(s): Sims-Gould, Joanie, Byrne, Kerry, Hicks, Elisabeth, Franke, Thea, Stolee, Paul

Abstract: Social workers play a key role in the delivery of interdisciplinary health care. However, in the past decade, concerns have been raised about social work's sustainability and contributions in a changing health care sector. These changes come at a time when older patients are more complex and vulnerable than ever before. In this article, using a strengths-based approach, the authors examine the key contributions made by social workers working with older patients with hip fracture as they strive to achieve successful care transitions. Twenty-five interviews with health care professionals (HCPs) were conducted and then analyzed using an analytical coding framework. Although social workers are vital, they are often underused and overlooked in the care of hip fracture patients. The authors sketch the important contributions that social workers make to care transitions after hip fracture, specifically informational continuity; patient-HCP relational continuity; conflict resolution; mediation among family, patient, and HCP (for example, doctors and nurses); collaboration with family caregivers and community supports; and relocation counseling.

Title: Evaluation of the Usefulness of Consensus Definitions of Sarcopenia in Older Men: Results from the Observational Osteoporotic Fractures in Men Cohort Study.

Citation: Journal of the American Geriatrics Society, Nov 2015, vol. 63, no. 11, p. 2247-2259

Author(s): Cawthon, Peggy M, Blackwell, Terri L, Cauley, Jane, Kado, Deborah M,

Abstract: To evaluate the associations between definitions of sarcopenia and clinical outcomes and the ability of the definitions to discriminate those with a high likelihood of having these outcomes from those with a low likelihood. Osteoporotic Fractures in Men Study. Six clinical centers. Community-dwelling men aged 65 and older (N = 5,934). Sarcopenia definitions from the International Working Group, European Working Group on Sarcopenia in Older Persons, Foundation for the National Institutes of Health Sarcopenia Project, Baumgartner, and Newman were evaluated. Recurrent falls were defined as two or more self-reported falls in the year after baseline (n = 694, 11.9%). Incident hip fractures (n = 207, 3.5%) and deaths (n = 2,003, 34.1%) were confirmed according to central review of medical records over 9.8 years. Self-reported functional limitations were assessed at baseline and 4.6 years later. Logistic regression or proportional hazards models were used to estimate associations between sarcopenia and falls, hip fractures, and death. The discriminative ability of the sarcopenia definitions (vs reference models) for these outcomes was evaluated using area under the receiver operating characteristic curve or C-statistics. Referent models included age alone for falls, functional limitations and mortality, and age and bone mineral density for hip fractures. The association between sarcopenia according to the various definitions and risk of falls, functional limitations, and hip fractures was

variable; all definitions were associated with greater risk of death, but none of the definitions materially changed discrimination based on the AUC and C-statistic when compared with reference models (change $\leq 1\%$ in all models). Sarcopenia definitions as currently constructed did not consistently improve prediction of clinical outcomes in relatively healthy older men. © 2015, Copyright the Authors Journal compilation © 2015, The American Geriatrics Society.

Title: Reliability and validity of the Falls Efficacy Scale-International after hip fracture in patients aged ≥ 65 years.

Citation: Disability and rehabilitation, Nov 2015, vol. 37, no. 23, p. 2225-2232 (November 2015)

Author(s): Visschedijk, Jan H M, Terwee, Caroline B, Caljouw, Monique A A, S

Abstract: To assess the measurement properties of the Falls Efficacy Scale-International (FES-I) in patients after a hip fracture aged ≥ 65 years. In a sample of 100 patients, we examined the structural validity, internal consistency and construct validity. For the structural validity a confirmatory factor analysis was carried out. For construct validity predetermined hypotheses were tested. In a second sample of 21 older patients the inter-rater reliability was evaluated. The factor analysis yielded strong evidence that the FES-I is uni-dimensional in patients with a hip fracture; the Cronbach's alpha was 0.94. When testing the reliability, the intra-class correlation coefficient was 0.72, while the Standard Error of Measurement was 6.4 and the Smallest Detectable Change was 17.7 (on a scale from 16 to 64). The Spearman correlation of the FES-I with the one-item fear of falling instrument was high ($r = 0.68$). The correlation was moderate with instruments measuring functional performance constructs and low with instruments measuring psychological constructs. Reliability and structural validity of the FES-I in patients after a hip fracture are good. The construct validity appears more closely related to functional performance constructs than to psychological constructs, suggesting that the concept measured by the FES-I may not capture all aspects of fear of falling. Implications for Rehabilitation The Falls Efficacy Scale-International (FES-I), which is commonly used to measure fear of falling in community-dwelling older persons, can also be used to assess fear of falling in patients after a hip fracture. The reliability and the structural validity of the FES-I for these hip patients are good, whereas the construct validity of the FES-I is not optimal. The FES-I may not capture all aspects of fear of falling and may be more closely related to functional performance than to psychological concepts such as anxiety.

Title: Osteoporosis and sarcopenia in older age.

Citation: Bone, Nov 2015, vol. 80, p. 126-130 (November 2015)

Author(s): Edwards, M H, Dennison, E M, Aihie Sayer, A, Fielding, R, Cooper, C

Abstract: Osteoporosis and sarcopenia are common in older age and associated with significant morbidity and mortality. Consequently, they are both attended by a considerable

socioeconomic burden. Osteoporosis was defined by the World Health Organisation (WHO) in 1994 as a bone mineral density of less than 2.5 standard deviations below the sex-specific young adult mean and this characterisation has been adopted globally. Subsequently, a further step forward was taken when bone mineral density was incorporated into fracture risk prediction algorithms, such as the Fracture Risk Assessment Tool (FRAX[®]) also developed by the WHO. In contrast, for sarcopenia there have been several diagnostic criteria suggested, initially relating to low muscle mass alone and more recently low muscle mass and muscle function. However, none of these have been universally accepted. This has led to difficulties in accurately delineating the burden of disease, exploring geographic differences, and recruiting appropriate subjects to clinical trials. There is also uncertainty about how improvement in sarcopenia should be measured in pharmaceutical trials. Reasons for these difficulties include the number of facets of muscle health available, e.g. mass, strength, function, and performance, and the various clinical outcomes to which sarcopenia can be related such as falls, fracture, disability and premature mortality. It is imperative that a universal definition of sarcopenia is reached soon to facilitate greater progress in research into this debilitating condition. This article is part of a Special Issue entitled "Muscle Bone Interactions". Copyright © 2015 Elsevier Inc. All rights reserved.

Title: Risk of hip/femur fractures during the initiation period of α -adrenoceptor blocker therapy among elderly males: a self-controlled case series study.

Citation: British journal of clinical pharmacology, Nov 2015, vol. 80, no. 5, p. 1208-1218

Author(s): Lai, Chao-Lun, Kuo, Raymond Nien-Chen, Chen, Ho-Min, Chen, Ming-Fong, Chan, Kinwei Arnold, Lai, Mei-Shu

Abstract: This study aimed to evaluate the risk of hip/femur fractures during the initiation period of α -adrenoceptor blocker therapy using the National Health Insurance claims database, Taiwan, with a self-controlled case series design. All male beneficiaries aged over 50 years as of 2007, who were incident users of α -adrenoceptor blockers and also had a diagnosis of hip/femur fracture within the 2007-2009 study period were identified. The first day when the α -adrenoceptor blocker was prescribed was set as the index date. We partitioned the initial 21 day period following the index date as the post-exposure risk period 1, days 22-60 after the index date as the post-exposure risk period 2, the 21 day period prior to the index date as the pre-exposure risk period 1 and days 22-60 prior to the index date as the pre-exposure risk period 2. The remainder of the study period was defined as the unexposed period. The incidence rate ratio (IRR) of hip/femur fractures within each risk period compared with the unexposed period was estimated using a conditional Poisson regression model. A total of 5875 men were included. Compared with the unexposed period, the IRR of hip/femur fractures was 1.36 (95% confidence interval 1.06, 1.74, $P = 0.017$) within the post-exposure risk period 1 for patients without concomitant prescriptions of anti-hypertensive agents. Use of α -adrenoceptor blockers was associated with a small but significant increase in the risk of hip/femur fractures during the early initiation period in patients without concomitant prescriptions of anti-hypertensive agents. © 2015 The British Pharmacological Society.

Title: Epidemiology of atlas fractures-a national registry-based cohort study of 1,537 cases.

Citation: The spine journal : official journal of the North American Spine Society, Nov 2015, vol. 15, no. 11, p. 2332-2337 (November 1, 2015)

Author(s): Matthiessen, Christian, Robinson, Yohan

Abstract: The epidemiology of fractures of the first cervical vertebra-the atlas-has not been well documented. Previous studies concerning atlas fractures focus on treatment and form a weak platform for epidemiologic study. This study aims to provide reliable epidemiologic data on atlas fractures. This was a national registry-based cohort study. A total of 1,537 cases of atlas fractures between 1997 and 2011 from the Swedish National Patient Registry (NPR). The outcome measures were annual incidence and mortality. Data from the NPR and the Swedish Cause of Death Registry were extracted, including age, gender, diagnosis, comorbidity, treatment codes, and date of death. The Charlson Comorbidity Index was calculated and a survival analysis performed. A total of 869 (56.5%) cases were men, and 668 (43.5%) were women. The mean age of the entire population was 64 years. The proportion of atlas fractures of all registered cervical fractures was 10.6%. In 19% of all cases, there was an additional fracture of the axis, and 7% of all cases had additional subaxial cervical fractures. Patients with fractures of the axis were older than patients with isolated atlas fractures. The annual incidence almost doubled during the study period, and in 2011, it was 17 per million inhabitants. The greatest increase in incidence occurred in the elderly population. Atlas fractures occurred predominantly in the elderly population. Further study is needed to determine the cause of the increasing incidence. Copyright © 2015 The Authors. Published by Elsevier Inc. All rights reserved.

Title: Predictors of 10-Year Mortality After Primary Femoral Neck Fracture In Elderly Patients.

Citation: Value in health : the journal of the International Society for Pharmacoeconomics and Outcomes Research, Nov 2015, vol. 18, no. 7, p. A638. (November 2015)

Author(s): Juhász, K, Gajdácsi, J, Molics, B, Boncz, I, Sebestyén, A

Title: Incidence and 1-Year Outcomes of Perioperative Atrial Arrhythmia in Elderly Adults After Hip Fracture Surgery.

Citation: Journal of the American Geriatrics Society, Nov 2015, vol. 63, no. 11, p. 2269-2274

Author(s): Gupta, Bhanu P, Steckelberg, Rachel C, Gullerud, Rachel E, Huddleston, Paul M, Kirkland, Lisa L, Wright, R Scott, Huddleston, Jeanne M

Abstract: To determine the incidence and 1-year outcomes of an elderly population with perioperative atrial arrhythmia (PAA) within 7 days of hip fracture surgery. Retrospective

cohort study. The Rochester Epidemiology Project (REP). Elderly adults consecutive undergoing hip fracture repair from 1988 to 2002 in Olmsted County, Minnesota (N = 1,088, mean age 84.0 ± 7.4 , 80.2% female). Baseline clinical variables were analyzed in relation to survival using Cox proportional hazards methods for comparison. Sixty-one participants (5.6%) developed PAA within the first 7 days. During 1 year of follow-up, 239 (22%) participants died. PAA was associated with greater mortality (45% vs 21%; hazard ratio (HR) = 2.8, 95% confidence interval (CI) = 1.9-4.2). Other mortality risk factors were male sex (HR = 2.0, 95% CI = 1.5-2.6), congestive heart failure (HR = 2.1, 95% CI = 1.7-2.8), chronic renal insufficiency (HR = 2.0, 95% CI = 1.5-2.8), dementia (HR = 2.9, 95% CI = 2.2-3.7), and American Society of Anesthesiologists risk Class III, IV, or V (HR = 3.3, 95% CI = 1.9-5.9). Elderly adults undergoing hip fracture surgery who develop PAA within 7 days have significantly higher 1-year mortality than those who do not. Further studies are indicated to determine whether prevention of PAA will reduce mortality in this population. © 2015, Copyright the Authors Journal compilation © 2015, The American Geriatrics Society.

Title: A Population-Based 16-Year Study on the Risk Factors of Surgical Site Infection in Patients after Bone Grafting: A Cross-Sectional Study in Taiwan.

Citation: *Medicine*, Nov 2015, vol. 94, no. 47, p. e2034. (November 2015)

Author(s): Lee, Fang-Hsin, Shen, Po-Chuan, Jou, I-Ming, Li, Chung-Yi, Hsieh, Jeng-Long

Abstract: Bone grafting is a commonly used orthopedic surgical procedure that will provide bone formation in bone defects or regions of defective bone healing. A major complication following bone grafting is a postoperative recipient graft site infection that is associated with substantial mortality and increased use of medical resources. The purpose of the study was to identify the risk factors associated with infection after bone-grafting surgery. Data from 1,303,347 patients listed in the Taiwan National Health Insurance Research Database (NHIRD) and admitted to hospitals from 1997 through 2012 who underwent primary bone grafting (mean age: 46.57 years old; mean length of hospital stay: 8.04 days) were analyzed. The incidence of infection by age, hospital stay, gender, income, chronic disease (tuberculosis [TB]; diabetes mellitus [DM]; acquired immunodeficiency syndrome [AIDS]), fracture complications (nonunion; delayed union fracture), types of graft and hospital was evaluated. Three percent of the patients developed a postoperative recipient graft site infection. Multivariable analysis revealed that patients were more likely to develop a post bone-grafting surgery infection if they were older, had a longer hospital stay, were male, had a lower income, or had comorbid TB, DM, or AIDS. Patients were more likely to develop an infection if they had a nonunion, an alloplast graft, or treated in a local clinic. Our findings should provide a clinically relevant reference for surgeons who perform bone grafting. Patients should be informed of the potential risks.

Title: Population-based study of the association of osteoporosis and chronic musculoskeletal pain and locomotive syndrome: the Katashina study.

Citation: Journal of orthopaedic science : official journal of the Japanese Orthopaedic Association, Nov 2015, vol. 20, no. 6, p. 1085-1089 (November 2015)

Author(s): Iizuka, Yoichi, Iizuka, Haku, Mieda, Tokue, Tajika, Tsuyoshi, Yamamoto, Atsushi, Takagishi, Kenji

Abstract: "Locomotive syndrome", a concept proposed by the Japanese Orthopaedic Association (JOA), refers to risk conditions among the elderly population that may lead to the need for nursing care services. The association between osteoporosis (OP) or chronic musculoskeletal pain (CMSP) and the screening results of locomotive dysfunction identified by the GLFS-25 (a 25-question geriatric locomotive function scale) has not yet been adequately investigated. Two hundred eighty-seven Japanese subjects were evaluated for locomotive dysfunction using the GLFS-25 and were also evaluated for their bone status by a quantitative ultrasound (QUS) assessment of the bone status (i.e., the measurement of the speed of sound (SOS) of the calcaneus). Furthermore, a questionnaire survey concerning CMSP persisting for 3 months or longer was given to those subjects. Statistical analyses were conducted to clarify the association between the bone status or CMSP and the screening results for locomotive dysfunction. The % young adult mean (%YAM) of the SOS was significantly lower among the 43 subjects with locomotive dysfunction identified by the GLFS-25 than in the 244 subjects without locomotive dysfunction ($p < 0.001$). Moreover, low back pain ($p < 0.01$), shoulder pain ($p < 0.05$) and knee pain ($p < 0.001$) were significantly more frequently observed in the 43 subjects with locomotive dysfunction than the 244 subjects without locomotive dysfunction. The screening results of the %YAM of the SOS was significantly associated with the population demonstrating locomotive dysfunction screened by the GLFS-25 based on the age-, gender- and BMI-adjusted analysis (OR 0.95, 95 % CI 0.91-0.98). Furthermore, the %YAM of SOS correlated with the GLFS-25 score ($\beta = -0.212$, $p = 0.001$). Furthermore, low back pain (OR 2.60, 95 % CI 1.29-5.24), shoulder pain (OR 2.16, 95 % CI 1.00-4.66), and knee pain (OR 2.97, 95 % CI 1.41-6.28) were found to be associated with locomotive dysfunction based on the results of the age-, gender- and a BMI-adjusted analysis. The %YAM of the SOS was associated with the population demonstrating locomotive dysfunction which was identified using the GLFS-25, and the severity of locomotive dysfunction evaluated by the GLFS-25 was found to correlate with the %YAM of the SOS. Furthermore, low back pain, shoulder pain and knee pain were found to be associated with the screening results for locomotive dysfunction by the GLFS-25.

Title: A Comparison of the Charlson and Elixhauser Comorbidity Measures to Predict Inpatient Mortality After Proximal Humerus Fracture.

Citation: Journal of orthopaedic trauma, Nov 2015, vol. 29, no. 11, p. 488-493

Author(s): Menendez, Mariano E, Ring, David

Abstract: Proximal humerus fractures are very common in infirm elderly patients and are associated with appreciable inpatient mortality. We sought to compare the discriminative ability of the Charlson and Elixhauser comorbidity measures for predicting inpatient mortality after proximal humerus fractures. Data from the Nationwide Inpatient Sample (2002-2011) were obtained. We constructed 2 main multivariable logistic regression models, with inpatient mortality as the dependent variable and 1 of the 2 comorbidity scores, as well

as age and sex, as independent variables. A base model that contained only age and sex was also evaluated. The predictive performance of the Charlson and Elixhauser comorbidity measures was assessed and compared using the area under the receiver operating characteristic curve (AUC) derived from these regression models. Elixhauser comorbidity adjustment provided better discrimination of inpatient mortality [AUC = 0.840, 95% confidence interval (CI), 0.828-0.853] than the Charlson model (AUC = 0.786, 95% CI, 0.771-0.801) and the base model without comorbidity adjustment (AUC = 0.722, 95% CI, 0.705-0.740). In terms of relative improvement in predictive ability, the Elixhauser score performed 46% better than the Charlson score. Given that inadequate comorbidity risk adjustment can unfairly penalize hospitals and surgeons that care for a disproportionate share of infirm and sick patients, wider adoption of the Elixhauser measure for mortality prediction after proximal humerus fracture-and perhaps other musculoskeletal injuries-merits to be considered. Prognostic Level II. See Instructions for Authors for a complete description of levels of evidence.



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