

mental healthcare could enhance need-based patient stratification. This, in turn, may reduce the number of treatment steps needed to achieve and sustain an adequate treatment response. The development of a valid tool to identify patients with MDD in need of highly specialized care is hampered by the lack of a comprehensive understanding of early indicators that distinguish patients with and without a need for highly specialized MDD care. The aim of this study, therefore, was to systematically review studies on early indicators of patients with MDD likely in need of highly specialized care. **METHODS:** A structured literature search was performed of the PubMed and the PsycINFO databases following PRISMA guidelines. Two reviewers independently assessed study eligibility and determined the quality of the identified studies. Three reviewers independently executed data extraction by using a pre-piloted, standardized extraction form. The resulting early indicators were grouped by topical similarity, creating a concise summary of the findings. **RESULTS:** The systematic search of all databases yielded a total of 7,843 references, of which fifteen were eligible for inclusion. The fifteen papers yielded a total of 50 unique early indicators. Overall, a more pronounced depression severity, a younger onset age, a history of prior poor treatment response, the presence of comorbid psychiatric disorders, the presence of comorbid somatic disorders, older age, and a socioeconomically disadvantaged status were found to be associated with proxies of need for highly specialized MDD care. **CONCLUSIONS:** Several early indicators are associated with the need for highly specialized MDD care. These indicators provide easily measurable factors that may serve as a starting point for the development of a valid tool to identify patients with MDD in need of highly specialized care.

PMH50

RETROSPECTIVE DATABASE STUDY DESCRIBING PATIENT CHARACTERISTICS AND RESOURCE USE IN SWEDISH PATIENTS RECEIVING SECOND GENERATION LONG ACTING INJECTION ANTIPSYCHOTICS

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OBJECTIVES: To describe Swedish patients treated with long-acting injection (LAI) antipsychotics in terms of demographics and disease severity and to estimate measures of resource utilization and persistence. **METHODS:** Patients with a diagnosis of schizophrenia (ICD 10 code F20.X) in the National Patient Register were identified through filled prescriptions for olanzapine (OLAI), paliperidone (PLAI), or risperidone (RLAI) from the Swedish Prescribed Drug Register between 2006 through 2013. We assessed the mean annual rate of hospitalizations (all-cause and for psychiatric reasons) 1 year prior and 1 year after initiation of the LAI antipsychotic treatment. Persistence was investigated using non-parametric survival analysis. **RESULTS:** During 2006–2013, 210 patients initiated OLAI, 437 PLAI, and 1,652 RLAI (mean age: 44, 47, and 45 years, respectively; 35%–41% female). Mean (SD) annual rate of hospitalizations 1 year before treatment initiation was 2.49 (2.53), 1.78 (2.47), and 1.78 (2.08) for all-cause and 1.81 (2.05), 1.25 (2.06), and 1.16 (1.56) for psychiatric reasons for OLAI, PLAI, and RLAI, respectively. Mean (SD) for all-cause and psychiatric hospitalizations 1 year after treatment initiation was 1.30 (2.45) and 0.99 (1.95), 0.98 (1.85) and 0.76 (1.43), and 1.02 (1.95) and 0.72 (1.49), respectively, corresponding to a decrease of 48% and 45% (OLAI), 45% and 39% (PLAI), and 43% and 38% (RLAI). The probability (survivor function [95% CI]) of being persistent 1 year after treatment initiation was 0.66 (0.58–0.73), 0.71 (0.66–0.76), and 0.46 (0.43–0.49) for OLAI, PLAI, and RLAI, respectively. **CONCLUSIONS:** Swedish patients with schizophrenia treated with a LAI antipsychotic have high hospital resource use, especially in the year prior to LAI initiation. LAI treatment was associated with a substantial reduction in hospitalizations across all groups. In the year following treatment initiation, the largest numerical reduction in hospitalizations was observed with OLAI. Persistence to OLAI treatment was not inferior to persistence with PLAI or RLAI.

MUSCULAR-SKELETAL DISORDERS – Clinical Outcomes Studies

PMS1

GOUT DIAGNOSIS AND POSSIBLE INCREASED RISK OF JOINT REPLACEMENT: A POPULATION-BASED COHORT STUDY OF OLDER ADULTS

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OBJECTIVES: Gout is the most common cause of inflammatory arthritis in men and older women. There are very few studies on joint replacement rates among patients with diagnosed gout compared to those without gout. Our objective was to assess risk of joint replacement in patients with diagnosed gout compared to those without gout diagnosis, including predictors. **METHODS:** A population-based cohort study of 252,255 individuals aged >66 years was reconstructed using Québec RAMQ and MedEcho administrative databases from 1995 to 2009. Patients with a gout diagnosis were included only by meeting all of the following criteria: gout defined by ICD-9 or ICD-10 or exposure to specific gout treatment. The cohort entry of patients with gout was defined as the first date of established gout. The primary outcome was incident joint replacement rate defined by a composite endpoint of patients with a medical procedure in the hip, femur and basin, knee, ankle/foot, hand/finger, shoulder and humerus, forearm and elbow, or wrist. Potential predictive factors included gout diagnosis, cardiovascular disease, cerebrovascular disease, peripheral vascular disease, diabetes, kidney disease, pulmonary disease, rheumatic disease, and gastrointestinal disease. **RESULTS:** The incident rate of joint replacements was at 2.67 (95% CI: 2.57–2.77) and 1.92 (1.90–1.94) per 100 person-years among patients with diagnosed gout and those without a gout diagnosis, respectively ($p < 0.0001$). Major predictors of total joint replacements were rheumatic disease (43%), gout diagnosis (31%), advanced age (42%), cerebrovascular disease (13%), acute renal failure (10%), respiratory disease (12%), and gastrointestinal disease (10%). Significant predictors

related to drug exposure are NSAIDs, intra-articular corticosteroids, and narcotic use. Noted limitations included the limited ability to adjust for clinical severity and potential residual confounding factors. **CONCLUSIONS:** Gout disease was associated with a 31% increased risk of joint replacement in older adults. Further research is needed to confirm this potential associated risk.

PMS2

THE CHOICE BETWEEN HIP PROSTHETIC IMPLANTS IN TOTAL HIP REPLACEMENT: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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OBJECTIVES: To determine which prosthetic hip implant combination of bearing surface materials, head sizes, and fixation techniques is most effective in primary total hip replacement (THR). Traditional small head, metal-on-polyethylene cemented implants have a long track record of use, but newer, more expensive implants were developed to improve implant survival. **METHODS:** We carried out a systematic review of randomised controlled trials comparing different hip implant bearing surfaces, head sizes, and fixation techniques used in THR and resurfacing hip replacement. Our primary outcome was revision surgery. An extensive search and risk of bias assessment were followed by Bayesian network meta-analysis with hazard ratios as the effect measure. We assumed the likelihood of revision surgery to differ between two time periods: shortly after primary surgery (0–2 years) and in the longer run (2–10 years), and we used a random walk model to relate long term to short term outcomes in a single modelling framework. In sensitivity analyses, we analysed both time periods separately. **RESULTS:** Of the 72 studies in our review, only 15 studies (3177 randomised hips) provided enough information to be included in the analyses. We did not find strong evidence that any of the implants reduces the risk of revision compared to the reference traditional implants. However, small head, metal-on-metal cemented implants (HR 4.44, 1.66 to 16.7 at 0–2 years) and resurfacing hip replacements (HR 12.2, 2.28 to 126 at 0–2 years) showed an increased risk of revision compared to traditional implants. These findings were robust when analyzing time periods separately. **CONCLUSIONS:** We found no evidence that newer material combinations reduce the risk of revision when compared to traditional small head, cemented, metal-on-polyethylene implants. Nonetheless, resurfacings and small head, metal-on-metal cemented implants may increase the risk of revision compared with traditional implants.

PMS3

REAL-WORLD QUALITY-ADJUSTED LIFE-YEARS GAINS IN PORTUGUESE PATIENTS WITH RHEUMATOID ARTHRITIS FOLLOWING 1 YEAR OF GOLIMUMAB TREATMENT

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OBJECTIVES: We aimed to measure QALY gains following 1 year of golimumab treatment in Portuguese RA patients in a real-world setting and calculated the number needed per QALY gained (NNQ). **METHODS:** Data were collected from the national RA registry (Reuma.Pt) for all registered biologic-naïve patients aged >18 years diagnosed with active RA who started and remained on golimumab combined with methotrexate for at least 52 weeks (Study period: March 2011 – August 2015). QALY values were calculated through the sum of each patient EQ-5D utility value [derived from the health assessment questionnaire disability index (HAQ) scores by applying a validated algorithm: EQ-5D = 0.9567 – (0.306 x HAQ)] multiplied by the corresponding follow-up time. The NNQ (i.e. the number of patients one has to treat in order to gain 1 QALY) was calculated as the inverted value of the utility gain over 1 year. **RESULTS:** From the 54 subjects with at least 52 weeks of treatment with the information regarding HAQ, 19 (35.2%) achieved functional remission (i.e. HAQ < 0.5). 88.9% were women, with mean age 56.6 (SD 12.1) years, disease duration 9.0 (SD 7.3) years, mean DAS28 3.3 (SD 1.2), HAQ score 0.9 (SD 0.7), and EQ-5D utility score 0.7 (SD 0.2). We observed significant gains in the quality of life and 81.3% of patients gained QALY. The mean QALY gain was 0.16 per patient and the NNQ was 6.25. Based on these data we estimated an incremental cost-effectiveness ratio of less than previously published figures (i.e. <60,000 €/QALY). However, this analysis was limited by a short time horizon and limited cost data available (e.g. productivity gains were not included). **CONCLUSIONS:** In this real-world study we observed a significant functional remission and an improvement on the quality of life of RA patients treated with golimumab in Portugal. Furthermore, the vast majority of patients gained QALY.

PMS4

EFFECTIVENESS OF THE TRX SUSPENSION TRAINER IN PEOPLE WITH OSTEOARTHRITIS

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OBJECTIVES: In the rehabilitation of people with osteoarthritis the unstable - and the suspension devices relevance still unclear, but there have been plenty of studies abroad confirmed the suspension training method efficiency, among athletes, healthy people and also people with certain types of musculoskeletal insufficiencies. In our research, we wanted to compare the efficiency of the suspension training method versus a general physiotherapy training program. We created an intensive 4 week long training program using a TRX Suspension device and also we made an other program with general open kinetic chain exercises, both adapted to elderly person with osteoarthritis. **METHODS:** There were 75 volunteers, but only 50 were

suitable of them to start the training program the other 25 were not capable of doing it because of our inclusion criteria (55–75 years of age with Seyfried I. or II. stadium of osteoarthritis) or exclusion criteria (lower limb emergency intervention, osteoporosis, or internal medical disease). For the data collection we used a physiotherapy test sheet which was created by Péter Tardi. We used special test to determine their balancing capacity (Flamingo test), the strength endurance (Squat Test at Home), the functional physical performance (Timed Up and Go), the muscle strength (Oxford Medical Scale), and their Range of Movement (with goniometer). **RESULTS:** The patients in the TRX group have a significantly greater improvement in static balancing ability ($p < 0.05$), functional performance ($p < 0.05$), strength-endurance ($p < 0.05$), and muscle strength and in the joint's range of movement. **CONCLUSIONS:** Given the results that were achieved, we can say that the TRX Suspension Trainer or other suspension devices are useful in the rehabilitation for people with hip or knee osteoarthritis.

PMS5

TREATMENT OF OSTEOCHONDRAL FRACTURE AND MEDIAL PATELLOFEMORAL LIGAMENT RUPTURE AFTER PATELLAR DISLOCATION

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OBJECTIVES: To assess the outcomes of osteochondral fracture fragment fixation or removal combined with medial patellofemoral ligament (MPFL) reconstruction after patellar dislocation. **METHODS:** Patients' hospital records were retrospectively reviewed. Patients with osteochondral fracture fragment fixation or removal combined with MPFL reconstruction using a tendon autograft were included. Primary outcome was patellar recurrent dislocation. Radiographs and MRIs were assessed for fracture location and fragment size. Patella alta was estimated using the Insall-Salvati (ISI), the Caton-Dechamps (CDI) and the patellofemoral (PTI) indexes. Patellar instability was measured as tibial tubercle distance to the trochlear groove (TT-TG). The Dejour classification served for assessing trochlear dysplasia. **RESULTS:** Eighteen patients were identified (median age 16 years; 10 men). Osteochondral fracture located in the patella ($n=16$) or the lateral tibial condyle ($n=2$). The ISI and the CDI indexes referred to patella alta in 11 patients; the PTI was considered normal. Two patients had patellar instability (TT-TG ≥ 20). All patients had trochlear dysplasia (Dejour: A, $n=9$; B, $n=9$). Fragment mean size was 15 mm. Ten of the 18 patients underwent fragment fixation using bioabsorbable pins ($n=7$), sutures ($n=2$) or screws ($n=1$). Loose fragments were removed from eight patients. Two patients underwent microfracture procedures on the fracture bed. Tendon autografts used in MPFL reconstruction were the gracilis ($n=10$), the abductor magnus ($n=5$) or the semitendinosus ($n=3$). The median follow-up was eight months. Thirteen patients healed without problems. In one case, resorption of the attached osteochondral body was diagnosed from MRIs. Three patients had mid-term functional knee limitations but symptoms subsided as time elapsed. One patient underwent debridement in treatment of locking knee due to graft hypertrophy. No recurrent dislocations occurred. **CONCLUSIONS:** Osteochondral fracture fragment fixation or removal combined with MPFL reconstruction using a ligament autograft are feasible options in the treatment of a large osteochondral fracture and MPFL rupture after patellar dislocation.

PMS6

THE THERAPEUTIC INDICATION OF INJECTABLE BEVACIZUMAB TO THE TREATMENT OF AGE-RELATED MUSCULAR DEGENERATION

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OBJECTIVES: To evaluate the therapeutic indication of 25mg/ml injectable bevacizumab to the treatment of age-related muscular degeneration (AMD) and choroidal neovascularization. **METHODS:** The research was carried out on March 7, 2015, in BMJ (Best Practice), Dynamed and UpToDate databases, and adopted the vocabulary of structured Descriptors in Health Sciences (DeCS) and Medical Subject Headings (MeSH): "bevacizumab", "age-related macular degeneration", "age-related eye disease", "macular degeneration", "retinal degeneration", "neovascularization" and "maculopathy". **RESULTS:** According to studies on the BMJ, bevacizumab is a first-line treatment medicine for advanced exudative stage. Intravitreal injection of inhibitors of vascular endothelial growth factor (VEGF) is the mainstay of treatment for ARMD. The ranibizumab (evidence B) is approved for use in this indication. While Bevacizumab has not been approved for use in ARMD, direct comparison studies indicate that its effectiveness is similar to ranibizumab. The bevacizumab dose is 1.25mg intravitreally once a month. On Dynamed, bevacizumab can be used to treat people with the two diseases (Level 2 evidence). On UpToDate, a systematic review included twelve trials that used as the AMD treatment option photodynamic therapy with verteporfin or pegaptanib, or ranibizumab or bevacizumab. The intervention with ranibizumab prevented vision loss by 45%. Another review of 9 clinical trials showed subjects treated with bevacizumab improved their visual acuity when compared to other treatments. Regardless of the criteria of the authors, a higher proportion of patients showed an increase in visual acuity in the group treated with bevacizumab (29/100) than in treated with photodynamic therapy alone or combined with triamcinolone (12/99). In other studies, treatment of ARMD patients can be done with intravitreal administration of 1.25mg (0.05mL) for 3 months. Bevacizumab can be administered additional months based on the ophthalmologic evaluation. **CONCLUSIONS:** Bevacizumab 25mg/mL injectable solution can be used in the treatment of ARMD and choroidal neovascularization, increasing visual acuity.

PMS7

ASSESSMENT OF CTX-1 BONE BIOMARKER AS AN INDICATOR OF ANTIRESORPTIVE THERAPY EFFICACY AND OF PERSISTENCE IN A FRACTURE LIAISON SERVICE

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OBJECTIVES: Serum CTX-1 (marker of osteoclastic activity) levels have demonstrated to be inversely related to drug efficacy in the suppression of bone resorption. A reference threshold of optimal suppression is yet to be determined. Our goal was to assess CTX-1 level fluctuations in time in a cohort of patients under antiresorptive therapy after a fragility fracture. CTX-1 levels were also compared in patients reporting to be persistent or not and we described suppression profiles according to two CTX-1 thresholds. Our second objective was to assess CTX-1 level variations in time according to fracture sites. **METHODS:** A prospective systematic follow-up of patients with fragility fractures through a Fracture Liaison Service (FLS) includes 543 patients. We analyzed data of CTX-1 measured at baseline, 6, 12 and 18 months of follow-up in the FLS. Reported-persistence to treatment was correlated with levels of CTX-1, and proportions of patients suppressed with CTX-1 ≤ 0.3 and of ≤ 0.2 ng/mL thresholds were obtained at 6, 12 and 18 months. Mean CTX-1 values were measured at baseline, 6, 12 and 18 months according to three categories of fracture; hip, vertebral and non-hip/non-vertebral (NHNV). **RESULTS:** CTX-1 levels were significantly lower at 6, 12 and 18 months compared to baseline ($p < 0.001$). Persistent patients had lower CTX-1 levels than non-persistent patients at 6, 12 and 18 months ($p < 0.05$). Between 80–100% of persistent patients had a CTX-1 level under 0.3 ng/mL, 65–75% being under 0.2 ng/mL. Mean CTX-1 levels were significantly lower during follow-ups compared to baseline only in NHNV fractures ($p < 0.001$), the number of patients in hip and vertebral fractures groups not elevated enough to obtain powered results. **CONCLUSIONS:** CTX-1 levels in fragility fracture patients were consistent with treatment initiation, even more in persistent patients. These results support the use of CTX-1 for bone resorption suppression monitoring in patients treated for a fragility fracture.

PMS8

RESULTS OF A PHASE 3, RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF THE EFFICACY AND SAFETY OF SIRUKUMAB, AN ANTI-IL-6 CYTOKINE MONOCLONAL ANTIBODY, IN PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS DESPITE DISEASE-MODIFYING ANTI-RHEUMATIC DRUG TREATMENT (SIRROUND-D)

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OBJECTIVES: To evaluate efficacy and safety of sirukumab, a selective, high-affinity anti-IL-6 cytokine monoclonal antibody, in patients with rheumatoid arthritis (RA) refractory to conventional synthetic disease-modifying anti-rheumatic drugs (DMARDs). **METHODS:** Patients ($N = 1,670$) with active RA despite DMARD treatment were randomized (1:1:1) to sirukumab subcutaneous (SC) 50mg q4w, sirukumab SC 100mg q2w, or placebo SC q2w. Patients in the placebo group who had $< 20\%$ improvement at Weeks 18 or 40 or who remained on placebo at Week 52 were re-randomized to 1 of the 2 sirukumab doses. The proportion of patients achieving ACR20 at Week 16 and change from baseline in modified Sharp/van der Heijde (SHS) radiographic damage score at Week 52 were co-primary endpoints. **RESULTS:** Significantly more patients achieved ACR20 at Week 16 with sirukumab 50mg q4w and 100mg q2w compared to placebo (54.8% and 53.5%, respectively, vs 26.4% for placebo; both $P < 0.001$). The mean change from baseline in SHS score at Week 52 was 0.50 and 0.46 for patients receiving sirukumab 50mg q4w and 100mg q2w, respectively, compared with 3.69 for placebo (both $P < 0.001$). All major secondary endpoints were met for both sirukumab doses; significantly greater improvements were also observed with both sirukumab doses in patient-reported outcomes, assessed by the Short Form-36 (SF-36) Health Survey, and significantly more patients on sirukumab did not experience radiographic progression from baseline to Week 52 (all $P < 0.001$). The safety profile of sirukumab was consistent with previous clinical results from sirukumab RA studies and with the known safety profile of anti-IL-6 treatment. **CONCLUSIONS:** Treatment with sirukumab SC 50mg q4w and 100mg q2w reduced RA signs/symptoms, inhibited radiographic progression, and led to improvements in health-related quality of life in RA patients with inadequate DMARD response. The sirukumab safety profile was consistent with the known safety profile of anti-IL-6 treatment.

PMS9

THE SAFETY AND EFFECTIVENESS OF AUTOLOGOUS PLATELET RICH PLASMA (PRP) THERAPY FOR LATERAL EPICONDYLITIS: SYSTEMATIC REVIEWS

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OBJECTIVES: The purpose of this study was to evaluate the safety and effectiveness of autologous platelet rich plasma (PRP) therapy for lateral epicondylitis. **METHODS:** The literature review covered the period from 10 September 2015 to 7 October 2015, and eight Korean databases and foreign databases including Ovid-MEDLINE, EMBASE, and Cochrane Library were used. The outcomes of interest were pain (as measured by visual analogue scale (VAS) or Nirschl score), functional scores (as measured by Disabilities of the Arm, Shoulder and Hand Scale (DASH) or others), quality of life and complications. Two reviewers independently assessed the quality of the included studies and extracted data. The quality of the studies was assessed according to the Scottish Intercollegiate Guidelines Network (SIGN) tool. **RESULTS:** 11 studies fit the inclusion criteria. Of these, 7 were randomized controlled trials (RCTs) and 4 were prospective cohort studies. Some studies showed that the VAS for pain improved significantly from pre-injection to the follow-up in the PRP and control groups. Complications outcomes were rare. But the results of pain (Nirschl score), function score were inconsistent, and superiority of PRP over control treatments