

Methods 438 low-energy acute hip fracture cases and 316 healthy controls from the China Action on Spine and Hip Status (CASH) study were included in the study. Muscle cross sectional area (CSA) and density were measured for the gluteus maximus (G.max) and gluteus medius and minimus (G.med/min). Areal BMD (aBMD) of the femoral neck (FN) and total hip (TH) were measured. Using propensity score matching (PSM), we generated two samples with cases and controls matched for age, BMI and sex. Logistic models were used to evaluate the odds ratio (OR) of fracture per SD increase of muscle and bone parameters.

Results After PSM, 159 femoral neck fracture cases were matched with 159 non-fracture controls, and 101 intertrochanteric fracture cases with 101 controls. G.max muscle Hounsfield unit (HU) value (FN fracture: OR 0.39, CI% 0.28–0.54, TR fracture: OR 0.23, CI% 0.13–0.39) and G.med/min muscle HU value (FN fracture: OR 0.11, CI% 0.07–0.19, TR fracture: OR 0.05, CI% 0.02–0.13) were strongly associated with hip fracture after adjustment for FN aBMD. At both fracture sites G.med/min muscle density showed the best discrimination (AUC 0.882 for FN fractures, 0.945 for TR fractures) while G.max muscle density was equivalent to FN aBMD in discrimination of fractures and G.max muscle CSA was poorer than the other indices.

Conclusion Muscle density performs better than aBMD and muscle size in the discrimination of hip fracture.

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EFFICACY OF SYMPTOMATIC TREATMENTS FOR KNEE OA: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS WITH A 6-MONTH TIME-HORIZON

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Introduction: Several pharmacological options claim their ability to better control the symptoms of knee OA but their respective efficacy is still debated. The purpose of this network meta-analysis (NMA) is to assess and to compare the potential benefit of different pharmacological treatments (given for at least 6 months) on pain and function, in patients suffering from knee OA

Methods: Studies were retrieved through a systematic review process in accordance with the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA). Medline (via Ovid), Scopus, and Cochrane database of systematic reviews (via Ovid) were searched for RCTs published up to August 2018, performed in adults (18 years and over) and which assess the efficacy of knee OA treatments. All pharmacological treatments, commonly prescribed or currently reviewed by the regulatory authorities, for the symptomatic relief of knee OA, including all routes of administration, were considered, providing they were given for at least 6 consecutive months. The primary outcomes were pain and function changes from baseline. A Bayesian network meta-analysis combining direct and indirect comparisons was run and Standardized mean differences (SMDs) and mean differences with 95% credibility intervals (95%CrIs) were calculated. A hierarchy of the competing interventions using the surface under the cumulative ranking curve (SUCRA) and mean ranks was obtained.

Results: 9349 references were identified from the search strategy and 92 were concordant with our inclusion criteria. Among them, 83 interventions were studied for pain and 59 for function. More than half of the studies were performed on participants aged 60 years and older and the mean duration of treatment across studies was 50 months. A significant association with decreased pain was found for Hyaluronic Acid (SMD -0.28, 95%CrIs -0.39;-0.17), Crystalline Glucosamine Sulfate (SMD -

0.29, 95%CrIs -0.57;-0.01), the combination of Hyaluronic acid and Triamcinolone (SMD -0.39, 95%CrIs -0.75;-0.04), Vitamin D (SMD -0.31, 95%CrIs - 0.55;- 0.06) and pharmaceutical-grade Chondroitin Sulfate (SMD -0.23, 95%CrIs -0.39;-0.07). For pain, the combination Hyaluronic Acid + Triamcinolone had the highest probability of being the most effective long- term treatment (SUCRA value of 0.79). Moreover, a significant improvement in physical function was observed following treatment with Crystalline Glucosamine Sulfate (SMD -0.44, 95%CrIs -0.66;-0.22), Tanezumab (SMD -0.39, 95%CrIs -0.73,-0.05, Acetaminophen (SMD -0.34, 95%CrIs -0.69,0.00), Vitamin D (SMD -0.30, 95%CrIs -0.84,-0.24) and Hyaluronic Acid (SMD -0.21, 95%CrIs -0.44,0.01). For function, Crystalline Glucosamine Sulfate has the highest probability of being the most effective long-term treatment (SUCRA value of 0.91).

Conclusion: A minimum of 6-month treatment with Hyaluronic Acid, Crystalline Glucosamine Sulfate, pharmaceutical- grade Chondroitin Sulfate, Tanezumab, Vitamin D, Acetaminophen or the combination of Hyaluronic Acid and triamcinolone, was shown, in this NMA, to improve pain and/or physical function in patients suffering from knee OA.

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OSTEOGENESIS IMPERFECTA: FRACTURE CHARACTERISTICS DURING PREGNANCY AND POST-PARTUM

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Objectives. Pregnancy and post-partum are conditions associated with bone loss. Fracture occurrence during pregnancy and post-partum, and the determinants of these fractures, are not well known in Osteogenesis imperfecta (OI). The aim of this study was to characterize the fractures that occurred during pregnancy and the post-partum period in a cohort of women suffering from OI followed in Cochin Hospital or recruited through the French GRIO study group.

Materials and methods. Retrospective multicentric study including 29 OI patients from the Reference Center for Rare Bone Diseases of Cochin Hospital, Paris, and 21 patients included from other French Centers via the GRIO. A total of 50 patients, and 83 pregnancies, were included.

Results. Among the 50 OI patients included, 12 patients (24%) (14 pregnancies/83) had a fracture during pregnancy or in the 6 months following delivery. Among these patients, 2 presented fractures for 2 consecutive pregnancies, and 2 other patients presented fractures during pregnancy and also during the post-partum period. Therefore 16 pregnancy-related fracture events were analyzed. The localization of fractures were: spine (4/16), proximal femur (6/16), pelvis or ribs (3/16), ankle (1) and wrist (1). The mechanisms of fractures were: spontaneous (10/16), low trauma (3/16) and traumatic (3/16). Fractures during pregnancy occurred during the third trimester and those that occurred in the post-partum period occurred with a mean delay of 2 months from delivery.

Patients characteristics: OI women from this cohort had had 1 pregnancy in 52% of cases, 2 pregnancies in 34% and 3 pregnancies or more in 14%.