regression coefficients reflect better discrimination between presence or absence of symptomatic OA. Analyses were performed crude and adjusted for age, sex and BMI.
Results: In the sub-study (55% women, median age 56 years (IQR 50–61), BMI 30.0 kg/m^2 (27.9–33.0)) 177 participants had symptomatic knee OA.
All MR abnormalities except for subchondral cysts were highly frequent both in individuals with and without OA. The network graphs showed relations between osteophytes within all compartments of the knee and between cartilage defects on different locations. Within the same compartment, osteophytes and cartilage defects were related.
Baker's cysts showed the highest regression coefficient (0.293) for presence of symptomatic OA, followed by osteophytes and BMLs in the medial tibiofemoral compartment (0.185–0.279), osteophytes in the medial trochlear facet (0.262), and effusion (0.197). After adjustment for age, sex and BMI, the same abnormalities identified OA best. The area under the curve of the logistic ridge regression model including all assessed abnormalities was approximately 0.7. The figure illustrates which abnormalities best identify symptomatic OA (A: Baker's cyst, effusion, osteophyte in medial trochlear facet, B: osteophytes in medial femoral condyle and medial tibial plateau, C: BMLs in medial femoral condyle and medial tibial plateau).

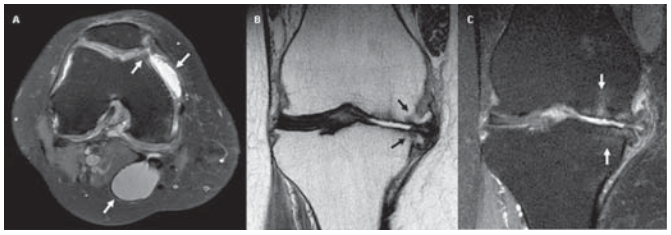

Figure 1

Conclusions: Baker's cysts discriminate best between individuals with and without symptomatic knee OA. Especially structural abnormalities as osteophytes and BMLs in the medial side of the tibiofemoral joint and effusion add further in discriminating symptomatic OA. Presence of Baker's cysts may present as a target for treatment.
Disclosure of Interest: None declared
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AB0767 EFFECT OF CHONDROITIN SULFATE ON SOLUBLE BIOMARKERS OF OSTEOARTHRITIS: HOW TO ANALYZE AND INTERPRET THE RESULTS FROM AN OPEN-LABEL TRIAL IN UNILATERAL KNEE OSTEOARTHRITIS PATIENTS

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Background: Changes in the level of biomarkers specific of osteoarthritis (OA) could help not only for the diagnosis but also for the monitoring of the disease progression and efficacy of a therapeutic intervention.
Objectives: The aim of this study was to investigate the effects of chondroitin sulfate (CS) on the serum levels of biomarkers in patients with knee OA.
Methods: Seventy two patients with unilateral symptomatic knee OA were involved in a post-authorization open-label study. Patients treated with CS (800 mg/day) were evaluated 5 times from D-30 to 6-month. The primary outcome was the % relative change in serum biomarkers (Coll2–1, Coll2–1NO2, Fib3–2). Secondary outcomes were the evaluation of pain (VAS) and function (Lequesne's Index). Responders and non-responders were classified according to OMERACT-OARSI recommendations. Finally, an original cut-off method was applied to categorize patients and interpret variations in serum levels of Coll2–1.
Results: Patients from either ITT or PP populations showed no difference in the serum biomarkers levels at baseline. Most of the biomarkers levels decreased after 1 month of treatment but no significant differences were reported. However when considering responders and non-responders from the ITT population, a significant difference was found for Coll2–1 at 3 months (p=0.030) and 6 months (p=0.038) (ACA approach). A decrease in pain (VAS) and an improvement in function (LI) were recorded throughout the visits ($p<0.01$). The decrease in pain was significant at 1, 3 and 6 months in ITT and PP populations when compared to baseline. The improvement of function was shown to be significant after 6 months. Finally, an intra-batch cut-off of 22% was determined for Coll2–1 assay based on the variation of Coll2–1 between two blood collections in non-arthritic adult subjects. This value allowed the definition of metabolic responders as patients with variation of Coll2–1 by more than 22%.This means that a variation of 22% or less in the serum level of Coll2–1 consisted in a variation related to homeostasis. In contrast, a variation over this limit revealed either an increase or a decrease in cartilage catabolism. Considering these categories, CS decreased Coll2–1 serum levels between baseline and 1-month visit compared to the value of Coll2–1 before treatment (screening visit) which can be interpreted as a drastic reduction of the proportion of patients with an increase of Coll2–1 over 22% (reduction from 13% to 3). It also consisted in a more important proportion of patients with a decrease in Coll2–1.
Conclusions: CS was effective modulating the metabolic status of KOA patients trough the reduction of Coll2–1 levels in responders and the disease's symptoms. Biomarkers are important tools for the monitoring of OA disease and of treatment. The main goal in biomarker research is to qualify them as surrogate endpoints in clinical trials. This study proposes a new approach for the analysis and the interpretation of the variation in biomarker levels and introduces the notion of metabolic responders.
Disclosure of Interest: None declared
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Osteoporosis

AB0768 PREVALENCE OF LOW BONE MASS IN PATIENT WITH EARLY INFLAMMATORY ARTHRITIS PRESENTING TO EARLY ARTHRITIS CLINIC

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Background: Low Bone Mineral Density (BMD) was described in patients with inflammatory arthritis. The data on its occurrence at preliminary phase of arthritis onset is insufficient. This study looks into the prevalence of low BMD in patients with early inflammatory arthritis (EIA).
Methods: We reviewed the medical records and electronic files of all patients with synovitis who attended rheumatology clinic between 1st December 2012 and 1st June 2015. Cases with features of synovitis less than two years were only included in the study. The following data was captured; demographics, time of symptom's onset, results of Dual-energy X-ray absorptiometry (DEXA) scan, and 25-hydroxyvitamin D level (ng/ml). Data are presented as the median values and interquartile range (IQR). The prevalence was described as a fraction. Mann-Whitney test was used to compare those with low BMD and those with normal BMD.
Results: We identified 83 patients with inflammatory arthritis for less than two years only 31 (37.3%) patients underwent DEXA scan. 26 (83.8%) were Emirati's, 27 (87.0%) were females, and median age was 61 (IQR 57 -65 years). 9 (29%) patients had normal BMD (T-score >-1.0 S.D), 13 (41.9%) patients had osteopenia (T-score between -1.0 and -2.5 S.D), and 9 (29%) patients had osteoporosis (T-score<- 2.5 S.D). Among osteoporotic patients, 4 (12.9%) had osteoporosis at the lumbar spine only, 1 (3.2%) had osteoporosis at neck of the femur, and 4 (12.9%) patients had osteoporosis at both the lumbar spine and neck of the femur. Age was a significant predictor of low BMD in patients with EIA (Z-Score is 2.357, p-value less than 0.02). However, ethnicity, gender, time lag before the initiation of therapy, and vitamin D level did not predict the occurrence of low BMD.
Conclusions: Low BMD is a frequent manifestation in patients with EIA, especially in the elder age group. Prospective studies are required to evaluate the long term significance of low BMD in EIA.
Disclosure of Interest: None declared
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AB0769 ASSESSMENT OF SEQUELS OF POLIOMYELITIS IN HIPS BY 3D-DXA

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Background: Polio is a devastating infectious disease that causes paralysis and severe muscular atrophy. When any of the legs is affected, a low aBMD at the corresponding hip is a common finding in DXA measurement.
Objectives: to study the influence of polio consequences on volumetric bone density and cortical thickness using the 3D-DXA technology.
Methods: 22 patients of both sexes suffering post-polio syndromes (mean age 57±uffering pos were scanned using a GE iDXA system and both proximal femurs were reconstructed using the 3D-DXA technology. 3D-DXA is based on the registration of a 3D statistical model of the femoral shape and density onto the 2D DXA image and provides measurements of volumetric BMD (vBMD) and BMCof the trabecular and cortical bone as well as a quantification of the cortical thickness. The measurements at the leg affected by polio were compared by t-test with those at the non-affected leg.
Results: Trabecular BMC was 22% lower (-1.8 g, $p<0.01$) and cortical BMC 19% lower (-2.9 g, $p<0.01$) at the polio leg (total hip region). Similar findings were observed for the vBMD: 18% decrease (-0.020 g/cm^3, $p<0.01$) at the trabecular region and a 2.3% decrease for the cortical bone (-0.024 g/cm^3, $p<0.01$). The proximal femur volume was also inferior (-12%, -9 cm^3, $p<0.01$). The cortical thickness was thinner at the polio leg (-12%, -0.2 mm, $p<0.01$).
Conclusions: A long period of decreased of mechanical charges, low muscle strength, postural imbalance has dramatic consequences on bone development. The analyses performed using the 3D-DXA technology indicates an overall