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Disclosure of Interests: Rebecca De Lorenzo Grant/research support from: Adienne Pharma & Biotech, Clara Sciorati: None declared, Antonella Monno: None declared, Francesco Bonomi: None declared, Silvia Cavalli: None declared, Antonio Francesco Di Naro: None declared, Stefano Previtati: None declared, Patrizia Rovere-Querini Grant/research support from: Adienne Pharma & Biotech

DOI: 10.1136/annrheumdis-2019-eular.7993

AB1137 **QUANTIFYING KNEE JOINT EFFUSIONS WITH CLINICAL TESTS, MUSCULOSKELETAL ULTRASOUND AND SYNOVIAL FLUID ASPIRATION: A PROSPECTIVE COHORT STUDY**

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Background: Aspiration of knee joint effusions is an integral diagnostic and therapeutic intervention in many rheumatologic diseases. Clinical examination has traditionally involved tests including the “patella tap” or “bulge test”. The accuracy of these tests for determining effusion presence and size is not well established. Musculoskeletal ultrasound (MUS) is considered better for identification and quantification of knee effusions.

Objectives: To investigate the correlation between both clinical examination and MUS to aspirated knee effusion volume.

Methods: We performed a prospective cohort study of 37 osteoarthritis patients with symptomatic knee effusions. Clinical assessment with patella tap, bulge test and knee circumference measurement were carried out. MUS was used to measure effusion depth in the suprapatellar, lateral and medial parapatellar views. All knee effusion aspirations were performed by the same experienced clinician using a consistent, lateral approach. Linear regression analysis was used to assess correlations between clinical tests, MUS and aspiration volume.

Results: In patients with >3ml of fluid aspirated, patella tap and bulge test were positive in 67% and 80% respectively. The positive predictive value for bulge test was 80%. Where larger volumes were aspirated (i.e. >10ml), patella tap and bulge test were only positive in 52% and 65% respectively. There was a significant correlation between the measured circumference of the index and non-index knee and aspiration of fluid (coefficient=5.6, $p=0.007$). The relationship between fluid depth on MUS and aspirated volume showed a trend towards statistical significance, with a depth of 1mm equating to 1.57 ml of fluid (coefficient=1.57, $p=0.06$).

Abstract AB1137 Figure 1. Relationship between aspirated volume and USS detected knee effusion depth

Conclusion: This pilot study demonstrates that a positive patella tap or bulge test is moderately predictive of knee effusion volume. However, this association is weaker when larger knee effusions are present. MUS

showed promise at accurately predicting knee effusion volume. A larger study is underway to assess this relationship further.

Disclosure of Interests: Thilinie De Silva: None declared, Chris Pham: None declared, Adam Rischin: None declared, Kim Le Marshall: None declared, Sara Vogrin: None declared, Albert Leung: None declared, Keith Lim Consultant for: Advisor for role of hepatitis and TB in Cimzia, UCB, Speakers bureau: Role of biological in pregnancy UCB

DOI: 10.1136/annrheumdis-2019-eular.3891

AB1138 **BONE SARCOIDOSIS: USEFULNESS OF 18F-FDG PET/CT**

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Background: Bone sarcoidosis: usefulness of ¹⁸F-FDG PET/CT

Objectives: Bone sarcoidosis is usually rare but more sensitive imaging procedures such as ¹⁸F-fluorodeoxyglucose Positron Emission Tomography/Computed Tomography (¹⁸F-FDG PET/CT) allow a better characterization of such lesions. We aimed to describe bone sarcoidosis involvement using ¹⁸F-FDG PET/CT.

Methods: We performed an observational retrospective study of patients with pulmonary sarcoidosis having a ¹⁸F-FDG PET/CT. As stated by ATS/ERS/WASOG criteria, diagnosis of sarcoidosis was established on the presence of clinical symptoms and/or imaging features of sarcoidosis, and evidence of non-caseating epithelioid granuloma in a biopsy sample after exclusion of other known etiology of granuloma. We assessed clinical and ¹⁸F-FDG PET/CT characteristics.

Results: A total of 85 patients (56.5% of female, median age 47 years) with sarcoidosis were analyzed. The median of disease follow-up was 4 years. Sarcoidosis occurred in more than three organs among 66% of cases. Using ATS/ERS/WASOG criteria, bone sarcoidosis was diagnosed in 12 (14%) patients. Spine was the most commonly affected bone (92%), followed by pelvis (67%), sternum (33%), humerus (25%) and fingers (17%). Only peripheral adenopathy was associated with bone lesions ($p=0.04$). Seven patients have benefited from a follow-up ¹⁸F-FDG PET/CT, which in 100% of cases showed an improvement of lesions.

Conclusion: Bone sarcoidosis occurred in 14% of patients, affecting multiple bones and mostly the axial skeleton. ¹⁸F-FDG PET/CT appears to be a sensitive imaging for diagnosis and follow-up of bone sarcoidosis.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.5134