aggregated into a dichotomous total thumb base involvement score (0–1 in both joints vs ≥2 in at least one joint).
Results: 85 out of 202 patients (84% women, mean age 60.1 years) reported pain on palpation in the thumb base. Synovitis was seen in both thumb base joints (CMC1 42%, STT 37%), although prevalence of grade 2–3 synovitis was low in both the CMC1 (16%) and STT (14%). BMLs were present in CMC1 and STT in 54 and 53%, respectively, with 18 and 21% having a sum score of 2–3, and 16 and 7% a sum score ≥4. In absence of radiographic osteophytes, presence of synovitis or BMLs in either thumb base joint was not statistically significantly associated with thumb base tenderness (ORs 1.9 [95% CI 0.6–6.4] and 1.5 [0.5–4.3], respectively). However, in absence of synovitis or BMLs, radiographic osteophytes and pain were associated, with increasing ORs when MRI lesions were additionally present (Table). Similar results were found for self-reported thumb base pain (not shown).

Table. Number of tender joints (yes/no) and associations of MRI inflammation and radiographic osteophytes with pain on palpation in thumb base osteoarthritis (n=196*)

		Osteophyte CMC1 or STT	
		absent	*present*
Synovitis	*CMC1 and STT grade 0-1*	1 23/70	4.2 (2.0-8.6) 30/22
	CMC1 or STT grade ≥ 2	1.9 (0.6-6.4) 5/8	5.9 (2.6-13.3) 25/13
BML	*CMC1 and STT grade 0-1*	1 21/64	4.3 (1.7-11.0) 14/10
	CMC1 or STT grade ≥ 2	1.5 (0.5-4.3) 7/14	5.3 (2.6-10.8) 42/24

BML, bone marrow lesion; CI, confidence interval; CMC1, first carpometacarpal; MRI, magnetic resonance imaging; OR, odds ratio; STT, scaphotrapeziotrapezoid.
*n=196 patients with available radiographs and evaluable MRI for synovitis and BMLs.

Conclusions: Synovitis and BMLs are present in the thumb base, although severe MRI lesions were uncommon. Prevalence of synovitis was similar in the CMC1 and STT joints, although higher BML scores were more frequently seen in CMC1. Radiographic osteophytes seemed more important in predicting thumb base tenderness than MRI inflammation alone. Combined presence of radiographic osteophytes and MRI lesions had a small additive effect. These findings are in contrast to results from IP OA studies, supporting thumb base OA as a distinct hand OA subset. It might also explain why trials investigating intra-articular corticosteroids in thumb base OA have led to equivocal results.
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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.2879

SAT0513 FUNCTIONAL IMPAIRMENT RATHER THAN BURDEN OF CO-MORBIDITIES IS ASSOCIATED WITH A 5-YEAR CHANGE IN HEALTH STATE UTILITY IN HIP AND KNEE OSTEOARTHRITIS: RESULTS FROM THE KHOALA COHORT STUDY

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Background: Functional impairment of hip and knee osteoarthritis (OA) and associated co-morbidities can independently impact patient's health state utility (HSU), a useful indicator for valuing health in medico-economic studies.
Objectives: This study aimed to examine the respective influence of the evolution of functional impairment and of burden of co-morbidities on a 5-year change in HSU for patients with OA.
Methods: 548 patients (Mean age of 61.1 years, 66.6% of women and 68.1% with knee OA) from the KHOALA study with 5 years follow-up were included. Functional impairment, co-morbidities and HSU were measured annually using the WOMAC (0–100) [1], FCI (1–18) [2] and SF-6D (0–1) [3], respectively. First, baseline clinical patterns were identified using hierarchical clustering methods [4]. Then, the role of these patterns as determinants of 5-year change in HSU was analysed using hierarchical mixed models.
Results: Two clusters were identified: cluster 1 *"Low functional impairment and few co-morbidities"* (65.3%) and cluster 2 "*Severe functional impairment and many co-morbidities*" (34.7%). Compared to the cluster 1, the functional impairment of cluster 2 significantly decreased (-14.5 [-18.1; -10.92]) at 5 year follow up, while the co-morbidity index significantly increased in the two clusters (+0.18 [-0.22; 0.57]). The mean baseline HSU score was 0.66 (0.70 for cluster 1 and 0.59 for cluster 2). Compared to cluster 1, patients in cluster 2 had a significantly higher increased in 5-year HSU (β=+0.0335 [0.0088; 0.0583]) (R^2=21%). The difference of 5-year change in HSU was no more significant when adjusted for change in functional impairment (β=+0.0335; p=0.008 vs. -0.0153; p=0.30) (R^2=42%) while it remained significant when adjusted for change in co-morbidity index (β=+0.0335; p=0.008 vs. +0.0386; p=0.002) (R^2=27%).
Conclusions: Cluster analysis showed that patients with severe functional impairment also had high rate of co-morbidities à baseline. The reduction of OA functional impairment is an important determinant of 5-year improvement of HSU while burden of co-morbidities was not associated with change in hip and knee OA HSU. This result highlights the importance of reducing functional impairment in clinical management of patients with hip and knee OA, and gives clues for interpretation of medico-economic analyses.
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Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2017-eular.3796

SAT0514 CAN IMMUNOPHENOTYPING OF SYNOVIAL FLUID CELLS HELP DISTINGUISH BETWEEN PATIENTS WITH OSTEOARTHRITIS?

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Background: Osteoarthritis (OA) is a leading cause of chronic pain and functional disability in elder people. It is not a homogeneous but diverse group of synovial joint diseases. This could stay behind the therapeutic inconsistency observed in clinical practice caused probably by different diseases and/or different stages of a single disease. The comprehensive immunophenotyping of immune cells and their cell counts in synovial fluid (SF) might therefore advance our understanding of a particular type/stage of OA. This could have diagnostic value as well as provide novel insights into the pathophysiology of OA.
Objectives: To characterize immune cells present in SFs from OA patients in different stages of a disease.
Methods: We performed immunophenotyping of SFs from 63 patients with OA and 10 SFs from control patients (non-OA) without clinical/radiographic signs of OA using flow cytometry. We were able to characterize the following immune cells in the sampled SFs: T helper lymphocytes ($CD3^+/CD4^+$), T cytotoxic lymphocytes ($CD3^+/CD8^+$), NK cells ($CD3^-/CD16^+/CD56^+$), B lymphocytes ($CD19^+$), T regulatory (Treg) cells ($CD4^+/CD25^+/CD127^-$), mast cells ($CD203c^+/CD117^+$), M1- ($CD14^+/CD86^+/HLA\text{-}DR^{high}$) and M2-polarized macrophages ($CD14^+/CD163^+/CD206^+$), and neutrophils ($CD15^+/CD16^+$).
Results: A comparison between OA and control (non-OA) SFs revealed phenotypic alterations mainly in T cells, NK cells, macrophages, and neutrophils. T cells were the predominant population in the SFs, with $CD4^+$ T lymphocytes being more prevalent than $CD8^+$ T cells in OA (increased CD4/CD8 ratio). The second largest cell population was macrophages. Despite the dominant mixed-polarized (M1-M2) macrophage subpopulations in both the studied groups, SFs from the OA patients displayed a tendency towards greater M1 activity comparing to the controls. A markedly increased percentage of neutrophils found in the OA group was associated with their activated state compared to the controls (increased CD11b). No difference was found in percentages of B, Treg and mast cells. Despite the similar numbers of NK cells in both the groups, the activation-associated marker CD69 was up-regulated in NK cells from the OA patients. Representative dot-plots (FCS-SSC) of inter-individual variability of the main immune cell populations in synovial fluids from osteoarthritic patients is shown in Figure 1.

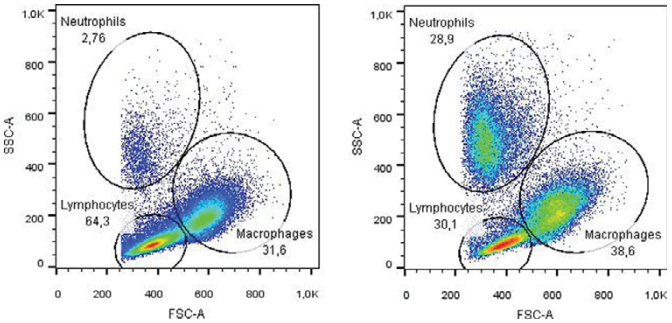

Figure 1. Representative dot-plots (FCS-SSC) of inter-individual variability of the main immune cell populations in synovial fluids from osteoarthritic patients.

Conclusions: We were able to distinguish between the OA cases and controls