AB0801 RELIABILITY OF A NOVEL ULTRASONOGRAPHIC SCALE FOR ACTIVITY OF KNEE OSTEOARTHRITIS

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Background: Knee osteoarthritis

Objectives: To assess the reliability of a novel ultrasonographic scale of activity in knee osteoarthritis (OA)

Methods: A cross-sectional observational study included 110 patients with knee pain who fulfilled the American College of Rheumatology (ACR) criteria for knee osteoarthritis (OA). All patients were subjected to clinical assessment WOMAC scale (Western Ontario and McMaster Universities Index of Osteoarthritis and global visual analog scale) and functional assessment using health assessment questionnaire (HAQ). Ultrasonographic assessment of activity was done By 3 rheumatologists with different levels of experience in musculoskeletal Ultrasonography (1-12 years). Ultrasonographic assessments were done according to (MOAKA scale) that was proposed by the first author (table 1).

Abstract AB0801 Table 1. Mortada Osteoarthritis Knee Activity score (MOAKA score)

Domain	Description	Score
Severity of knee OA	6 grades according to severity scale published by Mortada et al 2016 (1)	Grade 0: 0 Grade 1: 1 Grade2a: 2 Grade 2b: 3 Grade 3: 4 Grade 4: 5
Effusion	4 grades Grade 0: no effusion Grade 1: Mild effusion Grade 2: moderate effusion Grade 3: severe effusion	Grade 0: 0 Grade 1: 1 Grade 2: 2 Grade 3: 3
Synovitis	4 grades using the combined EULAR/OMERACT score of grey scale synovitis and Doppler activity	Grade 0: 0 Grade 1: 1 Grade 2: 2 Grade 3: 3
Pes Anserine tendonitis/bursitis	3 grades Grade 0: normal, Grade 1: mild inflammation Grade 2: severe inflammation	Grade 0: 0 Grade 1: 1 Grade 2: 2
Backer cyst	3 grades; Grade 0: normal no cyst, Grade 1: small and simple cyst Grade 2: large and/or complicated cyst	Grade 0: 0 Grade 1: 1 Grade 2: 2
Total scores	Sum of scores of all domains	0 - 15

Results: There were high kappa values both in intraobserver and interobserver evaluation of activity of knee OA using the proposed (MOAKA) ultrasonographic scale (0.85 and 0.75 respectively).

There were positive correlations between MOAKA score and all WOMAC subscales (pain, stiffness and function) ($r=0.4$, $P=0.02$, $r=0.35$, $P=0.001$ and $r=0.4$, $P=0.01$) respectively.

Also there were a strong positive correlation between MOAKA scale and both (VAS and HAQ) ($r=0.86$, $P=0.001$ and $r=0.71$, $P=0.001$)

Conclusion: US can reliably detect the activity of Knee OA. Good agreement was found between the proposed US grading scale and WOMAC & HAQ scores. MOAKA US scale is simple and reliable.

Disclosure of Interests: None declared

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AB0802 CYTOKINE PROFILE IN SYNOVIAL FLUID FROM PATIENTS WITH OSTEOARTHRITIS WITH OR WITHOUT CALCIUM CRYSTALS

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Background: The most important pathogenetic calcium crystals that can be found in synovial fluid (SF) are calcium pyrophosphate (CPP) and basic calcium phosphate (BCP) crystals. We and others have demonstrated that a good portion of patients with osteoarthritis (OA) have these type of crystals in their SF and that they are associated with a higher inflammatory state independently from the disease severity [1].

Objectives: The aim of this study was to investigate the levels of IL-1b, IL-8, IL-6, IL-10, CCL2 and OSMr in the SF of patients affected with OA considering the presence of CPP crystals and the positivity to the alizarin red test (a non-specific test for BCP crystals). A sub-analysis has been conducted subdividing patients according to their Kellgren-Lawrence (K-L) radiographic score.

Methods: Synovial fluid was collected from 69 OA consecutive patients diagnosed according to the EULAR criteria. Forty patients were negative to (CPP-) and 29 positive to (CPP+) CPP crystals. A standard analysis was performed for each sample including, white blood cell (WBC) count, differential cell count, crystal search under polarized light microscopy and alizarin red test. The cytokines were measured after appropriate dilutions by ELISA (ThermoFisher) and expressed as pg/ml. The Mann-Whitney test was used to investigate differences between the groups of patients positive and negative to CPP; the Spearman rank test was used for correlations, while the Kruskal-Wallis to compare the groups according to the K-L score.

Results: With respect to the group of CPP-, the group of CPP+ patients had higher levels of WBC count (251.7 ± 199.3 vs 176.3 ± 161.8 cells/mm³; $p=0.004$), PMN% (5 ± 7.1 vs 0.44 ± 1.54 ; $p<0.0001$), IL-1b (8.92 ± 6.29 vs 4.63 ± 12.2 ; $p<0.0001$) and IL-8 (53.73 ± 45.83 vs 26.20 ± 35.94 ; $p=0.0003$). No differences were instead observed for the other cytokines considered. We did not find any differences subdividing patients according to the SF positivity to the alizarin red staining. Some correlations were observed in the whole group of patients between IL-1 and IL-8 ($p=0.004$), IL-1 and PMN ($p=0.0006$), IL-8 and WBC ($p=0.001$), IL-8 and PMN ($p<0.0001$), IL-10 and IL-8 ($p=0.04$), IL-10 and WBC ($p=0.014$), CCL2 and IL-6 (0.006). Although no differences have been found analysing the variables in the groups subdivided by the K-L scores, all the cytokines showed higher levels in patients with a K-L score equal to 2.

Conclusion: Although associated with higher inflammatory SF indices and IL-1 and IL-8 levels, calcium crystals still play an undefined role in OA. More studies are warranted to evaluate if patients with calcium crystals in their SF might need a more specific treatment.

REFERENCE

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AB0803 SYNOVIAL INTERLEUKIN-8 LEVELS ARE ASSOCIATED TO RADIOGRAPHIC SEVERITY OF KNEE OSTEOARTHRITIS. A CROSS-SECTIONAL STUDY

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Background: Radiographic severity is used in routine clinical practice to evaluate knee osteoarthritis (KOA) structural damage. There are no conclusive studies on the associations between synovial inflammatory markers and the different features of radiographic damage in KOA.