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 OsteoaArthritis 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

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.

Objectives: To evaluate the association between inflammatory markers in synovial fluid with the different features of radiographic severity in patients with KOA.

Methods: Cross-sectional study of 114 female patients aged 50-85 with symptomatic primary KOA with significant joint effusion (>4 mm at midline patellar line) confirmed by ultrasound. The following information was collected: age, KOA symptoms duration, body mass index; plain standing knee Rx in semi-flexion were evaluated for radiographic severity by modified OARSI atlas evaluating separately osteophytes (OPH) and joint space narrowing (JSN). The OPH score was obtained searching for marginal osteophytes in both medial and external femoral condyles and tibial plateaus, scoring 0 to 3 in each quadrant, for a total score ranging from 0-12. Due to the high number of different scores obtained, and sometimes with a low number of patients, we grouped osteophytes scores 1-2 as mild, 3-6 as moderate and seven or more as severe osteophyte count. The JSN score was calculated in both medial and lateral knee compartments, grading the joint space 0 to 3 in each one, for a total score ranging from 0 to 6. A JSN score of 0 was considered as normal, 1-2 as moderate and 3 or more as high JSN severity. Five inflammatory markers: TNF alpha, high sensitivity C-reactive protein (hsCRP), interleukin 6 (IL-6), interleukin 8 (IL-8) and calprotectin were measured by ELISA following manufacturer recommendations for synovial fluid dilutions. A comparison between medians of the three groups was carried out and a multivariate analysis controlled by age, symptom duration, BMI and all five inflammatory markers were performed.

Results: A significant association for symptom duration and synovial IL8 was observed for osteophytes (p<0.0001 and p<0.05, respectively), which remained after adjustment (p=0.002 and p=0.037, respectively). Regarding symptom duration, the differences were related to high severity osteophyte index, compared to moderate or low stages (p= 0.0005 and p=0.002, respectively), while for IL-8 the differences were associated to a low OPH severity index compared with a moderate osteophyte score (p=0.011), with IL-8 levels approximately 33% less than the moderate OPH score (p=0.011).

For JSN, in the adjusted analysis, patients with a high JSN score had synovial IL-8 levels of 40% more than those with JSN 0 (p=0.035), while no differences were found between the moderate JSN score and the other two degrees. Regarding hsCRP, 30% higher levels were found in patients with a JSN moderate degree compared with JSN 0 (p=0.033), while no significant differences were observed between severe and the other two degrees.

Conclusion: Interleukin-8 IL 8 was the inflammatory marker associated to radiographic severity as evaluated by osteophyte count and joint space narrowing score on plain radiography in patients with knee osteoarthritis.

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OSTEOARTHRITIS (OA) PATIENTS WITH LOW BASELINE MULTIDIMENSIONAL HEALTH ASSESSMENT QUESTIONNAIRE/ROUTINE ASSESSMENT OF PATIENT INDEX DATA (MDHAQ/RAPID3) SCORES FOR PAIN, PATIENT GLOBAL ASSESSMENT AND MORNING STIFFNESS ARE SIGNIFICANTLY MORE LIKELY TO IMPROVE OVER THE NEXT 6 MONTHS

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Background: The course of osteoarthritis (OA) is highly variable; up to 50% of patients show little progression over many years, while other patients show rapid progression. Relatively little is known about the clinical variables that might affect prognosis for progression.

Objectives: To analyze OA patient status in routine care at baseline according to baseline candidate prognostic multidimensional health assessment questionnaire (MDHAQ) variables, and 6 months later as improved, worsened or similar according to the same variables.

Methods: All patients complete an MDHAQ/RAPID3 (routine assessment of patient index data) at all visits prior to seeing the rheumatologist at an academic site. The 2-page MDHAQ/RAPID3 includes 0-10 scores for physical function (FN), and visual analog scales (VAS) for pain (PN) and patient global assessment (PATGL), compiled into a 0-30 RAPID3, as well as a 0-10 fatigue VAS, 0-48 self-report painful joint count, 0-60 symptom checklist, and minutes of morning stiffness. OA patients were classified into 3 groups, based on change in RAPID3 ≥3.8, the minimal

clinically important improvement (MCII), from baseline to 6-month follow-up (range 3-9 months), as >3.8, <3.8, or within 3.8 units. Statistical significance was studied with one-way analysis of variance (ANOVA) and chi square.

Results: Among 173 OA patients, 22 (13%) were improved, 95 (55%) unchanged, and 56 (32%) worsened 6 months later. The 3 groups did not differ significantly in age, gender, ethnicity, educational level or BMI (Table). Patients who improved compared to those who were unchanged or worsened had significantly lower baseline RAPID3, pain and patient global VAS, and morning stiffness. The patients who improved also had lower, but not statistically significant, physical function score and fatigue VAS. No differences were seen among the 3 groups in numbers of symptoms or self-report painful joint counts (Table).

Abstract AB0804 Table 1. MDHAQ demographic and clinical variables at baseline of 173 osteoarthritis (OA) patients according to level of improvement 6-months later

	Groups according to RAPID3 difference from baseline to 6 m			
	WORSE (diff. <-3.8)	SAME (diff. -3.8 to 3.8)	IMPROVED (diff. >3.8)	P
N (%)	56 (32%)	95 (55%)	22 (13%)	
Demographics				
Age (years), mean (SD)	66.3 (10.4)	65.6 (10.3)	67.4 (13.1)	0.77
Female,%	96%	93%	79%	0.06
BMI, mean (SD)	33.6 (7.3)	32.7 (8.5)	32.5 (5.6)	0.88
Obese,%	65%	61%	54%	0.40
% Black	48%	44%	42%	0.18
Education (years),mean(SD)	13.4 (3.8)	13.9 (3.8)	13.2 (4.1)	0.76
Clinical Variables mean (SD)				
Function (0-10)	3.3 (1.9)	2.9 (1.9)	2.3 (1.7)	0.10
Pain VAS (0-10)	7.6 (1.7)	6.9 (2.3)	5.1 (2.8)	**<0.001**
Patient global VAS (0-10)	6.9 (2.2)	5.7 (2.6)	3.7 (2.9)	**<0.001**
RAPID3 (0-30)	17.4 (5.5)	15.2 (7.0)	10.2 (5.7)	**0.004**
Fatigue VAS (0-10)	5.6 (3.5)	4.9 (3.3)	4.8 (3.6)	0.59
Symptom checklist (0-60)	10 (8)	13 (8)	12 (10)	0.20
Self-report painful joint count (0-48)	13 (11)	12 (9)	12 (12)	0.92
Morning Stiffness, minutes	32.7 (37.5)	53.1 (50.5)	14 (15.1)	**0.010**

Abbreviations: VAS= visual analog scale; RAPID3= routine assessment of patient index data; BMI= body mass index; statistically significant in bold.

Conclusion: OA patients who were improved over 6 months according to RAPID3 had significantly lower baseline scores for RAPID3, pain, patient global assessment, and morning stiffness. It may be of value to stratify patients in clinical trials, other clinical research, and routine clinical care according to these variables.

Disclosure of Interests: None declared

WHAT FACTORS AFFECT THE RESULT OF LONG-TERM ANALGESIC THERAPY FOR OSTEOARTHRITIS? DATA FROM A MULTICENTER OPEN STUDY OF ORAL AVOCADO/SOYBEAN UNSAPONFABLES EFFECTIVENESS

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Background: Symptomatic slow-acting drugs for OA (SYSADOAs) and oral nonsteroidal anti-inflammatory drugs (NSAIDs) play a central role in the pharmacological management of osteoarthritis (OA). Factors affecting the effectiveness of OA therapy should be taken into account.

Objectives: to identify factors affecting the effectiveness of long-term analgesic therapy in patients with OA.

Methods: the study included 6448 patients with knee OA (mean age 57.8 ± 10.2 years, 70,9% women), with pain level ≥40 mm VAS. All patients received oral avocado/soybean unsaponfables (ASU) 300 mg/day within 3 months and ketoprofen lysine salt (KLS) 320 mg/day within 2 weeks at the beginning of the study. A 100 mm visual analog scale (VAS) was used to assess pain intensity. The result of treatment was evaluated on a scale of 0-5 points, where 0 – no effect, 5 - excellent effect. The criteria for a "good response" to therapy were: pain reduction ≥50% and treatment result ≥ 4 points. The value of the studied factors was determined using odds ratio; 95% confidence interval (OR; 95% CI).

Results: After 3 months of therapy the pain level decreased from 63.7 ± 12.0 mm to 14.2 ± 11.7 mm. A good response to treatment was noted in 87.4% of patients. Sex, body mass index ≥ 30 kg/m², type 2 diabetes, poor effect of NSAIDs and SYSADOAs in history did not affect the