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AB1256 CORRELATION BETWEEN SERUM CALPROTECTIN LEVELS, RAPID3 AND DISEASE ACTIVITY MEASURES IN PATIENTS WITH RHEUMATOID ARTHRITIS

M. Valls Roc[1], O. Codina Guinó[1], M. Sala Gomez[1], S. Castell Quiñones[1], C. Mora Maruny[2]. [1]*Hospital de Figueres, Rheumatology, Figueres, Spain*; [2]*Hospital de Figueres, Clinical Analysis Department, Figueres, Spain*

Background: Tight control of rheumatoid arthritis (RA) is essential and we need a validated, objective and reproducible disease measure to achieve it. There is not gold standard in RA. There is a rising interest in evaluating disease activity on the patient's point of view using patient-reported outcomes like RAPID3. Furthermore, some new biomarkers have appeared, like serum calprotectin, with promising results on its analyzing.
Objectives: To evaluate correlation between disease activity measures usually used in patients with RA (DAS28 ESR/CRP, SDAI and CDAI) and other alternative tools (RAPID3 and calprotectin). To analyze correlation between RAPID3 and serum calprotectin levels.
Methods: A cross-sectional study was performed. RA-patients (n=114) according to the ACR/EULAR 2010 classification criteria were consecutively enrolled from Rheumatology department at Hospital de Figueres during the period from February to June 2019. Disease activity, biomarkers and the assessment of the patient's health status with RAPID3 data were collected. Modified RAPID3 (mRAPID3) was calculated by subtracting the questions about the mood included in the questionnaire (k,l,m questions) to the results of the RAPID3 as if it were a response of the HAQ test. Coefficient Spearman's correlation (r) was used to assess the relationship between the variables, and coefficient of determination (r-squared=r^2 and adjusted r^2) was used to show the strength of correlation.
Results: 114 patients were included: 71% women, mean (SD) age 60(11) years, median disease duration 13(8) years. 80% had positive RF and 70% positive ACCP antibodies. 52% had erosions. 89% patients had been receiving treatment with csDMARDs, 38% with bDMARDs o dsDMARS and 66% with glucocorticoids. Disease activity measures' median values were DAS28ESR 3.07, DAS28CRP 2.76, SDAI 9.62 and CDAI 8.99 and showed low activity. The mean values of RAPID3 y mRAPID3 showed moderate activity (8.95 and 8.68 respectively). Median serum calprotectin level was 1.48µg/ml.
All correlations between variables were statistically significant and directly proportional although with different values (table).

Spearman's correlation coefficient between mRAPID3, serum calprotectin, disease activity scores and laboratory parameters

	mRAPID3	Calprotectin	CRP	ESR	DAS28ESR	DAS28PCR	SDAI	CDAI
mRAPID3	1							
Calprotectin	0.23	1						
CRP	0.33	0.59	1					
ESR	0.23	0.39	0.54	1				
DAS28-ESR	0.62	0.32	0.41	0.62	1			
DAS28-CRP	0.69	0.32	0.42	0.28	0.83	1		
SDAI	0.74	0.31	0.35	0.27	0.82	0.91	1	
CDAI	0.73	0.25	0.24	0.21	0.80	0.89	0.99	1

DAS28: Disease Activity Score, SDAI: Simplified Disease Activity Index, CDAI: Clinical Disease Activity Index, RAPID3m: Routine Assessment of Patient Index Data 3 modificative with k,l,m questions. CRP: C-reactive protein. ESR: erythrocyte sedimentation rate

Coefficient of determination found a weak association between RAPID3 and mRAPID3 with DAS28ESR (r^2=0,38) and moderate with DAS28CRP, SDAI and CDAI (r^2=0,47, 0,55 y 0,53). Determination serum calprotectin levels together with RAPID3 or mRAPID3 increased strength of correlation between DAS28ESR, DAS28CRP, SDAI and CDAI with RAPID3 (adjusted r^2=0,40, 0,49, 0,56, 0,52) and with mRAPID3 (adjusted r^2=0,41, 0,50, 0,56, 0,53). Correlation between RAPID3 and serum calprotectin levels was very weak (r^2=0,05).
Conclusion: Correlation between disease activity measures and mRAPID3 was strong, but it was weak with serum calprotectin levels. Correlation strength between RAPID3 and DAS28ESR was low and it was moderate with other composite indices, it maintained with RAPID3m and improved by adding serum calprotectin levels although modestly. There was a very weak correlation between RAPID3 and serum calprotectin levels suggesting that these two variables give us different information about the disease activity.

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AB1257 SCREENING FOR IMMUNOGLOBULIN A ANTIBODY REACTIVITY IN EARLY AXIAL SPONDYLOARTHRITIS IDENTIFIES NOVEL ANTIGENIC TARGETS

P. Vandormael[1], D. Quaden[1], P. Ruytinx[1], J. Janssens[1], J. Vanhoof[2], P. Geusens[1,2,3], V. Somers[1]. [1]*Hasselt University, Biomedical Research Institute, Diepenbeek, Belgium*; [2]*ReumaClinic, Genk, Belgium*; [3]*Maastricht University Medical Center, Internal Medicine, Rheumatology, Maastricht, Netherlands*

Background: Although autoantibodies are not generally considered to be a hallmark of axial spondyloarthritis (axSpA), increasing evidence suggests the presence of autoantibodies in a subset of axSpA patients. Most of these described antibodies are of the immunoglobulin G (IgG) isotype while other antibody isotypes are less well studied. Antibodies of the IgA isotype can be of interest due to the strong link between gut inflammation and spondyloarthropathies.
Objectives: The aim of this study was to identify and characterize novel IgA isotype (auto)antibodies specific for early axSpA patients.
Methods: An axSpA cDNA phage display library, representing the antigenic repertoire from axSpA hip synovium, was constructed and screened for reactivity with IgA antibodies in plasma of early axSpA patients (*n=10*). Using enzyme-linked immunosorbent assays (ELISA), antibody reactivity against 173 identified targets was initially determined in pooled plasma of early axSpA patients (n=60) and healthy controls (HC, *n=30*), collected at Hasselt University. Antigenic targets that showed increased IgA reactivity in axSpA plasma pools were further validated in individual plasma samples of early axSpA patients (*n=79*) and HC (*n=101*).
Results: We identified 10 novel Hasselt University (UH) axSpA peptide targets with increased IgA antibody reactivity in pooled axSpA plasma. At present, validation of 8 UH-axSpA-IgA peptide targets in individual plasma samples revealed antibody reactivity against at least one of these targets in 32% of early axSpA patients (25/79) compared to 26% in HC (31/101, *p=0.4082*). By combining the 3 UH-axSpA-IgA peptides with the highest positive likelihood ratio (LR+) into a panel, an increased overall specificity of 90% (10/101) could be achieved, with an associated sensitivity of 24% (19/79, *p=0.0138*) resulting in a LR+ of 2.4. Antibody reactivity testing of the remaining 2 UH-axSpA-IgA peptide targets is currently ongoing.
Conclusion: The increased reactivity of IgA (auto)antibodies against several novel antigenic peptide targets underscores the role of the humoral immune response in axSpA, and might indicate a potential link with mucosal inflammation. IgA antibody reactivity against these novel peptide targets will be further validated in independent cohorts of early axSpA patients as well as in patients with chronic low back pain.
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AB1258 THE VALUE OF THE SQUEEZE TEST FOR DETECTION OF SUBCLINICAL SYNOVITIS IN PATIENTS WITH ARTHRALGIA SUSPICIOUS FOR PROGRESSION TO RA

F. Wouters[1], E. Niemantsverdriet[1], A. Van der Helm - van Mil[1,2]. [1]*Leiden University Medical Centre, Department of Rheumatology, Leiden, Netherlands*; [2]*Erasmus Medical Centre, Department of Rheumatology, Rotterdam, Netherlands*

Background: The squeeze test (or compression test) is often used to quickly screen for arthritis in metacarpophalangeal (MCP)- and metatarsophalangeal (MTP)-joints. A positive test is traditionally assumed to indicate presence of synovitis. Previous studies in early arthritis indeed showed that a positive squeeze test was associated with presence of swollen MCP- and MTP-joints, as well as with local MRI-detected inflammation. The sensitivity of the test, with MRI-detected synovitis as reference, was 31-33%. The field is moving towards identifying patients at risk for rheumatoid arthritis (RA) in the phase of arthralgia. However, it is unclear if the squeeze test in the phase of clinically suspect arthralgia (CSA) is associated with subclinical inflammation, which can be detected with MRI.
Objectives: We aimed to assess if a positive squeeze test in patients with CSA is associated with MRI-detected subclinical inflammation, especially with