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AB0269

COMPARISON BETWEEN DIFFERENT DISEASE ACTIVITY SCORES IN ELDERLY ONSET RHEUMATOID ARTHRITIS

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Background: Elderly onset rheumatoid arthritis (EORA) has several peculiarities. Which activity index should we use in this age group is still an unresolved issue. The use of ESR in DAS28 is widespread, but it is well known that ESR could increase with age, overestimating activity. DAS28-PCR or SDAI, which uses PCR, or CDAI that does not use analytical data, could be more suitable alternatives.

Objectives: To describe disease activity scores evolution in EORA and to analyse the correlation and concordance between them.

Methods: Longitudinal observational study in naïve treatment EORA patients (ACR/EULAR 2010 criteria). Study visits were carried out basally (pre-treatment) and at month 1, 3, 6 and 12. DAS28 VSG, DAS28 PCR, SDAI and CDAI were calculated at each visit, and ACR/EULAR remission index at 12 months. The same rheumatologist made all visits and explorations. Correlations were analysed using the Spearman or Pearson correlation index (p value ≤ 0.001). The concordance was evaluated with the kappa index. The statistical study was performed with Stata 15.1.

Results: 45 patients with EORA were enrolled. Table 1 and 2 summarize the clinical and analytical characteristics.

All the scores had a very good linear correlation both at baseline and at follow-up (correlation score: 0.83-0.98). A moderate concordance was observed from the baseline visit between DAS28-VSG and DAS28-PCR ($k=0.43-0.52$, $p < 0.001$), which decrease to low at 12 months ($k=0.32$, $p < 0.001$). A concordance of 100% was observed at baseline analysing DAS28-VSG and SDAI ($k=1$; $p < 0.001$), but worsened during follow-up being moderate ($k=0.40-0.56$; $p < 0.001$). A very good concordance was observed comparing DAS28-VSG to CDAI at the baseline visit ($k=0.88$, $p < 0.001$), which decreased to good-moderate during follow-up ($k=0.40-0.63$, $p < 0.001$). Between DAS28-PCR and SDAI a moderate concordance

N=45						
Epidemiological data						
Women n (%)	21 (46.7)					
Age (mean ± σ)	74.8 ± 7.5					
Symptoms n (%)						
Shoulder girdle	34 (75.6)					
Pelvic girdle	20 (44.4)					
Peripheral joints	45 (100)					
Oedema	21 (46.7)					
Small joints of hands	42 (93.3)					
Analytical and radiological data n (%)						
FR +	15 (33.3)					
ACPA +	13 (28.9)					
FR and ACPA +	10 (22.2)					
Bone erosions	4 (8.8)					
Treatments n (%)						
Glucocorticoids	43 (95.5)					
DMARDs	40 (91.1)					
	Baseline N = 45	Month 1 N=45	Month 3 N=44	Month 6 N=44	Month 12 N=44	% remission Month 12 N=44
DAS28-VSG (mean ±σ)	6.3 ± 1.0	2.9 ± 1.7	3.0 ± 1.4	2.8 ± 1.3	3.1 ± 1.3	40.9
DAS28-PCR (mean ±σ)	5.7 ± 1.0	2.5 ± 1.4	2.4 ± 1.3	2.2 ± 1.1	2.5 ± 1.0	70.4
SDAI (mean±σ)	41.0 ± 13.8	9.3 ± 11.1	7.9 ± 10.7	6.9 ± 8.7	7.5 ± 8.0	31.8
CDAI (mean±σ)	36.9 ± 11.6	8.7 ± 10.4	7.4 ± 10.5	6.4 ± 8.5	6.8 ± 7.9	31.8
ACR/EULAR remission						18.2

was observed up to 6 months ($k=0.43-0.57$, $p < 0.001$), which worsened to low at 12 months ($k=0.32$, $p < 0.001$). The concordance between DAS28-PCR and CDAI was low-moderate ($k=0.26-0.48$, $p < 0.001$). On the other side, the agreement was very good between SDAI and CDAI throughout the follow-up ($k=0.86-0.93$, $p < 0.001$). The ACR/EULAR index had a very low concordance with DAS28-PCR ($k=0.17$, $p < 0.001$), moderate with DAS28-VSG ($k=0.49$, $p < 0.001$) and the results are good with SDAI and CDAI ($k=0.64$, $p < 0.001$).

Conclusion: The correlation between the different scores was good. However, the concordance between all the scores decreases as time passes, according to a higher percentage of patients in remission or low activity. This low-moderate concordance is demonstrated even between DAS28-PCR and DAS28-VSG, and when these are compared with CDAI and SDAI. CDAI and SDAI are the only ones that maintain a good concordance between them, even when the number of patients in remission or low activity increases. ACR/EULAR only maintains an acceptable concordance with the most restrictive scores, SDAI and CDAI. By contrast, agreement is very low with DAS28, especially by DAS-PCR.

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AB0270

POSITIVE ACPA WITHOUT EVIDENCE OF ARTHRITIS – A RARITY?

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Background: Rheumatoid Arthritis (RA) follows a variable disease course in regards to joint damage and functional outcome, therefore an early diagnosis is crucial for its management. However, occasionally, this diagnosis can be a challenge. Rheumatoid Factor (RF) and Anti-citrullinated peptide antibodies (ACPA) are the most useful biomarkers in the diagnosis of RA and, although individually they do not dictate the final diagnosis, they present high specificity and may be positive even before clinical manifestations of the disease occur.

ACPA is detected in approximately two thirds of the patients with RA and presents a superior diagnostic specificity when compared to RF. This specificity of 95-98% may present an increased value if it is three times superior to its value of reference.

Objectives: Share with the medical community and alerting them for the existence of patients with positive ACPA with no clinical evidence of RA.

Methods: By consulting the electronic clinical records of patients observed by a Rheumatologist, we identified and analyzed the patients that presented positive ACPA in their blood tests and no evidence of signs or symptoms of RA, during at least six years of follow-up. Patients with other rheumatic diseases, history of tuberculosis or chronic pulmonary diseases were excluded.

Results: We identified seven patients (average of 61 years old) with positive ACPA in at least two different blood tests, of which five presented a value three times superior to its normal value (<15 U/mL). It should be noted that, four patients presented both positive ACPA and RF. Clinically, all patients referred mechanical symptoms that varied between cervical, low back, shoulder and knee pain and did not present any record of swollen joints without trauma. Radiologically, in most cases we observed joint degenerative damage. Six years after the first positive ACPA, none of the patients developed any manifestation of inflammatory joint disease.

Conclusion: Studies reveal that positive ACPA in healthy patients may precede the clinical diagnosis of RA. The specificity of positive ACPA and RF one and a half years before the diagnosis of RA is approximately 99-100%. However, as we demonstrated, it is not uncommon to find during clinical practice individuals with positive ACPA without evidence of arthritis, which leads us to emphasize the importance of a detailed anamnesis with a meticulous physical examination before establishing a diagnosis based on the patient's blood tests.

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AB0271

FACTORS ASSOCIATED WITH HOSPITAL ADMISSIONS MORTALITY IN RHEUMATOID ARTHRITIS PATIENTS IN SPAIN. (TREND-AR STUDY)

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Background: There have been significant changes in the management of rheumatoid arthritis (RA) during the past 20 years. The potential impact of these changes on hospital admissions mortality is unknown.

Objectives: To analyse the factors associated with hospital admissions mortality in rheumatoid arthritis patients in Spain from 1999 to 2015.

Methods: This is a retrospective population study. We have analyzed a national administrative database that includes a Minimum Basic Data Set (MBDS) of hospital admissions of RA patients during the period 1999 to 2015. We studied all the cases of hospital admissions mortality. Patients were identified by concatenation of clinical record number and birth date. The analyzed factors were identified by the presence in primary and secondary diagnosis of the ICD9 codes, during the first hospital admission. Hazard Ratio (adjusted by sex and age) were calculated using Cox regression analyses.

Results: There were a total of 338.343 hospital admissions in RA patients during the study period, accounting for a total of 186.491 patients (127.203 women (68,21%) and 59.288 men (31,79%). The mean number of hospital admissions was 1,81(SD 1,7), with a minimum of 1 and a maximum of 43. The median time of follow-up was 11,85 months (DE 27,4). There were a total of 18.641 exits (5,5%). The HR (adjusted by sex and age) of the factors associated with hospital admissions mortality are shown in the next table:

Risk factor	Adjusted by sex and age Cox reg analyses		
	HR	IC	p
Gender (Male/Female)	1,242	1,20-1,28	<0,001
Age	1,066	1,064-1,068	<0,001
Charlson Index	1,276	1,268-1,284	<0,001
Stay	1,004	1,003-1,005	<0,001
Cardiovascular disease	1,318	1,274-1,362	<0,001
Dementia	1,852	1,696-2,021	<0,001
Diabetes Mellitus	1,093	1,05-1,137	<0,001
Neoplasm	2,432	2,313-2,556	<0,001
Hepatopathy severe-moderate	3,189	2,752-3,695	<0,001
COPD	1,113	1,071-1,156	<0,001
Pressure ulcers	1,115	1,006-1,235	0,036
Renal Disease	1,758	1,683-1,837	<0,001
Infectious disease during stay	1,593	1,545-1,642	<0,001
S. Felty	1,531	1,18-1,985	<0,001
Amyloidosis	2,957	2,627-3,327	<0,001
Hip fracture	0,731	0,664-0,804	<0,001
Tuberculosis	1,066	1,064-1,068	<0,001

Conclusion: In Spain, during the period of 1999-2015, the factors associated with hospital admission mortality (first admission) are: age, male sex, higher Charlson Index and longer hospital stay. The associated clinical variables are chronic hepatopathy, amyloidosis and neoplasm.

Disclosure of Interests:

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AB0272

EVALUATION OF CXCL13, sICAM-1, MMP-3 AND S100A8/A9 AS SERUM BIOMARKERS IN PATIENTS WITH RHEUMATOID ARTHRITIS TREATED WITH SUBCUTANEOUS TOLICIZUMAB

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Background: Serum levels of C-X-C motif chemokine ligand 13 (CXCL13) and soluble intercellular adhesion molecule-1 (sICAM-1) have been associated with response to tocilizumab (TCZ) in patients with rheumatoid arthritis (RA); levels of matrix metalloproteinase-3 (MMP-3) and S100A8/A9 have also been associated with RA disease activity and joint damage.

Objectives: To evaluate the association of CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels with disease activity and response to TCZ in patients with RA who achieved low disease activity with 24 weeks of TCZ + methotrexate (MTX) treatment and were subsequently randomized to TCZ monotherapy (mono) or TCZ + MTX in the COMP-ACT trial (NCT01855789).

Methods: US patients with RA who had an inadequate response to MTX received initial combination therapy of MTX plus TCZ 162 mg subcutaneous for 24 weeks. Patients who achieved Disease Activity Score in 28 joints calculated with erythrocyte sedimentation rate (DAS28-ESR) ≤ 3.2 at Week 24 were randomized 1:1 (double-blind) to receive either TCZ mono or continue TCZ + MTX until Week 52. Randomized patients were included in the present study based on baseline, Week 24 and Week 40 sample availability; serum levels of CXCL13, sICAM-1, MMP-3 and S100A8/A9 were measured by immunoassay. Correlations between CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels and DAS28-ESR at baseline, Week 24 and Week 40 were determined according to Spearman correlation coefficient. Changes in CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels from baseline to Week 24 (open-label period) were determined using Wilcoxon test. Mean changes in CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels from Week 24 to Week 40 (randomized period) were compared between treatment arms using analysis of covariance.

Results: Of 296 randomized patients, 249 were included (TCZ mono, n = 126; TCZ + MTX, n = 123). Biomarker levels were well balanced across treatment arms at baseline and Week 24 (randomization). At baseline, there were weak to mild correlations between DAS28-ESR and biomarker levels (CXCL13 [r = 0.13, P = 0.0411], sICAM-1 [r = 0.20, P = 0.0015], MMP-3 [r = 0.19, P = 0.0021], S100A8/A9 [r = 0.25, P = 0.0001]). Significant reductions in mean biomarker levels were observed from baseline to Week 24 (open-label period) among the total randomized patients (P < 0.0001). CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels were relatively stable between Week 24 and Week 40 (randomized period), with no significant differences between TCZ mono and TCZ + MTX (Table).

Table 1. Adverse Events During the 12-Month Post-Index Period, Stratified by OGC Daily Dose

	Dose Q1 ≥ 1.00 to ≤ 13.75 mg N = 184	Dose Q2 > 13.75 to ≤ 25.00 mg N = 184	Dose Q3 > 25.00 to ≤ 40.00 mg N = 198	Dose Q4 > 40 mg N = 161
Patients without type 2 diabetes and without HbA1c ≥ 7.5 in the pre-index period, n	120	136	130	110
With type 2 diabetes diagnosis or HbA1c ≥ 7.5 in the post-index period, n (%)	9 (7.5)	16 (11.8)	16 (12.3)	27 (24.5)
Maximum HbA1c value across HbA1c lab results during post-index, mean (SD)	7.75 (2.46)	8.30 (2.86)	8.25 (2.42)	8.61 (3.09)
Patients with diabetes diagnosis in the pre-index period but without HbA1c ≥ 7.5 in the pre-index period, n	31	18	40	15
With worsening diabetes with HbA1c ≥ 7.5 in the post-index period, n (%)	10 (32.3)	6 (33.3)	20 (50.0)	4 (26.7)
Patients without blood glucose level ≥ 200mg/dL in the pre-index period, n	173	169	179	147
With blood glucose level ≥ 200mg/dL in the post-index period, n (%)	13 (7.5)	15 (8.9)	24 (13.4)	22 (15.0)
Adverse events in the post-index period, n (%)				
Serious infection requiring hospitalization for infection and/or IV antibiotics	31 (16.8)	39 (21.2)	44 (22.2)	40 (24.8)
Serious infection requiring IV antibiotics	29 (15.8)	33 (17.9)	42 (21.2)	35 (21.7)
Serious infection requiring hospitalization for infection	6 (3.3)	12 (6.5)	12 (6.1)	8 (5.0)
Cataracts	22 (12.0)	27 (14.7)	34 (17.2)	35 (21.7)
Gastrointestinal bleeding or ulcer	11 (6.0)	11 (6.0)	13 (6.6)	19 (11.8)
Patients with BMI in pre- and post-index, n	171	162	181	141
Increase in BMI by 5, n (%)	7 (4.1)	5 (3.1)	9 (5.0)	9 (6.4)

BMI, body mass index; HbA1c, hemoglobin A1c; IV, intravenous; Q, quartile.

Conclusion: In agreement with previous studies, the association between baseline disease activity and CXCL13, sICAM-1, MMP-3 and S100A8/A9 levels was weak to mild; TCZ + MTX treatment from baseline to Week 24 (open-label period) resulted in significant reductions in all biomarkers. Changes in levels of CXCL13, sICAM-1, MMP-3 and S100A8/A9 from Week 24 to 40 (randomized period) were similar between treatment groups, consistent with the finding of non-inferiority of TCZ mono compared with TCZ + MTX in patients with RA who achieve low disease activity with TCZ + MTX.

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