

Usefulness of the Stricter Remission Criteria for Assessing the Absence of Subclinical Activity in Rheumatoid Arthritis

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Background/Purpose: It has been seen that patients with rheumatoid arthritis (RA) who achieve remission measured by DAS28 persist with subclinical synovitis in hands and toes when evaluated by ultrasound (US). Unfortunately US is not available in every rheumatology center. Recently, strict criteria like the CDAI, SDAI and ACR EULAR Boolean have been proposed. Therefore it would be interesting to know the accuracy of each set of criteria for assessing the absence of subclinical activity. The aim of this study was to evaluate the accuracy of CDAI, SDAI and ACR EULAR Boolean criteria in RA patients using as gold standard the absence of activity detected by US.

Methods: US examination was performed consecutively on 100 patients with RA fulfilling 2010 ACR EULAR criteria and that were in clinical remission (DAS 28-ESR<2.6) for at least 6 months. Then we evaluated if strict criteria were met (CDAI, SDAI, Boolean). A rheumatologist specialized in musculoskeletal US, blinded to clinical activity, performed a systematic evaluation on grayscale and power Doppler technique with multifrequency linear transducer (10-18MHz) in longitudinal and transverse sections. The radiocarpal joint, second and third metacarpophalangeal, second and third proximal interphalangeal in both hands and second to fifth metatarsophalangeal joints were assessed bilaterally. It was considered as a case if absence of grade II-III exudative synovitis and / or Power Doppler II-III using OMERACT's definitions was found. We defined controls as the ones with at least one of these signs of activity. We evaluated the sensitivity, specificity, positive likelihood ratio, positive predictive value (PPV) and negative predictive value (NPV).

Results: One hundred US were performed in 1.800 joints of 100 patients. 80% were women (n = 80) and the mean age was 52.7 SD 12 and the mean DAS28-ESR was 2 SD 0,47. There were no differences in age, sex, disease duration, treatment, or rheumatoid factor and anti-citrullinated protein antibodies positivity between patients with ultrasound activity and without it. 22% were receiving biologic therapy and the mean disease duration was 8.5 IQR 5-14 years and the mean

duration of remission was 11.3 months SD 6. Of the US screening 58 didn't have signs of activity and 42 had synovitis and / or PD grade II-III. Table 1 shows the status of activity and Table 2 shows the results.

Table 1

	Ultrasound without activity in hands and toes n (%)
Remission by <i>Boolean</i> ACR/EULAR criteria n:45	16 (36)
No Remission by <i>Boolean</i> ACR/EULAR criteria n:55	26 (47)
Remission by SDAI n:70	29 (41)
No remission by SDAI n:30	13 (43)
Remission by CDAI n: 62	26 (41)
No remission by CDAI n:38	16 (42)

Table 2

	Sensitivity % (CI 95)	Specificity % (CI 95)	PPV % (CI 95)	NPV % (CI 95)	Positive LR
Boolean ACR/EULAR	38 (29-48)	50 (40-60)	36 (26-45)	53 (43-63)	0,8 (0,5-1,2)
CDAI	62 (53-71)	38 (28-47)	42 (32-52)	58 (48-68)	1 (0,8-1,3)
SDAI	69 (60-78)	29 (20-38)	41 (32-51)	57 (47-66)	1 (0,8-1,3)

Conclusion: We found that in this population, which is in remission by DAS28, no one of the three set criteria is of great value for detecting the absence of activity when using US as gold standard.

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