

RADAI-5 REMISSION REPRESENTS 2011 ACR/EULAR PROPOSAL FOR REMISSION WITH HIGH SPECIFICITY

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OBJECTIVE

To approve RADAI-5 remission criteria with the recent proposed new ACR/EULAR remission criteria for rheumatoid arthritis (RA) [1,2].

METHOD

729 RA outpatients (characteristics see table 1) were assessed according to the RADAI-5 as well as the two approaches of the recently published ACR/EULAR proposal (Boolean based and index based) being in remission or not. Sensitivity, specificity, positive and negative likelihood ratio (+LR, -LR) and ROC-analysis (area under the curve (AUC)) were performed to illustrate the relation of the 3 different approaches defining remission. Student's t-test was applied to compare the core set parameters from patients in RADAI-5 remission with the two different groups defined to be in ACR/EULAR remission.

RESULTS

1844 assessments were included in this study (see table 1). 184 assessments were classified being in remission according to the Boolean based definition and 379 according to the index based definition of the newly ACR/EULAR remission proposals, 358 according to the RADAI-5 remission definition. 151 assessments could be classified to be in remission according to all 3 remission definitions, 1 presented to be in remission singularly according to the Boolean based definition, 126 were only in remission according to the index based approach and 133 singularly according to the RADAI-5 respectively (figure 1).

Comparing the RADAI-5 remission group with Boolean based definition showed a sensitivity of 83%, specificity of 88%, +LR 6.7, -LR 0.19 and AUC 0.85. Comparison with index based definition showed 59%, 91%, 5.96, 0.46, 0.75 respectively (table 2).

Core set parameters were significant different comparing assessments of the RADAI-5 and Boolean- as well as index based remission group except patient's global assessment compared with the index based and ESR with the Boolean based definition group (table 3).

CONCLUSION

- RADAI-5 remission definition indicates ACR/EULAR remission proposals with high specificity
- On group level, RADAI-5 remission definition is comparable to the ACR/EULAR remission proposal especially when compared to the index based proposal.
- Core set parameters are different in RADAI-5 defined remission and the two ACR/EULAR remission definitions.

REFERENCES

1. Rintelen B et al. The rheumatoid arthritis disease activity index-5 in daily use. Proposal for disease activity categories. J Rheumatol. 2009 May;36(5):918-24
2. Felson DT et al. American College of Rheumatology; European League Against Rheumatism. American College of Rheumatology/European League Against Rheumatism provisional definition of remission in rheumatoid arthritis for clinical trials. Arthritis Rheum. 2011 Mar;63(3):573-86

Table 1: Patients characteristics and number of assessments (CI: Confidence interval; min: minimum; max: maximum)

	All patients (if not other indicated: Mean (95%CI; min, max)
n patients	729
n assessments	1844
Gender (F/M)	559/170
RF-positive (%)	53.5
Caucasian ethnicity (%)	100
Age (years)	61.9 (60.9-62.9; 17,88)
Disease duration (months)	87.0 (80.1-94.1; 1,744)
No. of assessments/patient	2.5 (2.4-2.7; 1,18)
Interval of assessments (months)	6.7 (6.39-7.03; 1,38)
DAS28	3.45 (3.39-3.51; 0.38,8.24)
SDAI	11.2 (10.7-11.6; 0.0,73.4)
RADAI-5	3.5 (3.4-3.6; 0.0,10.0)

Table 2: Sensitivity, specificity, PPV, NPV, +LR, -LR of the investigated disease activity indices according to the 2011 ACR/EULAR proposed remission criteria. 2a: reference is the Boolean based proposal, 2b: reference is the index based proposal (SDAI ≤ 3.3). (SEN: sensitivity, SPEC: specificity, PPV: positive predictive value, NPV: negative predictive value, PREV: prevalence, AUC: area under the curve in receiver operating characteristics, +LR: positive likelihood ratio, -LR: negative likelihood ratio, CI: confidence interval)

Table 2a: Reference for remission: Boolean based proposal (95%CI)								
	SEN%	SPEC%	PPV%	NPV%	PREV%	AUC	+LR	-LR
RADAI-5	83 (77-88)	88 (86-89)	43 (38-48)	98 (97-99)	10 (9-11)	0.845 (0.821-0.887)	6.74 (5.84-7.78)	0.19 (0.14-0.27)

Table 2b: Reference for remission: Index based proposal (95%CI)								
	SEN%	SPEC%	PPV%	NPV%	PREV%	AUC	+LR	-LR
RADAI-5	59 (54-64)	91 (89-92)	62 (57-67)	90 (88-91)	21 (19-22)	0.748 (0.717-0.780)	5.96 (4.97-7.14)	0.46 (0.40-0.52)

Table 3: Disparity of the core set parameters in the different remission groups (unpaired t-test; ns: not significant; * p<0.0001; + p<0.01)

	Boolean based definition	Index based definition
RADAI-5 based definition	TJ * SJ * PATGA * MDGA * VASpain * ESR 1st hour ns CRP *	TJ * SJ * PATGA ns MDGA * VASpain + ESR 1st hour + CRP *

Figure 1: Number of assessments in remission according to the 3 criteria (Boolean based, index based and RADAI-5) and their overlapping

