Medical or Research Professionals/Clinicians

Topic area: Clinical topics by disease

Topic: 11. Rheumatoid arthritis - prognosis, predictors and outcome

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WHAT IS THE IMPACT OF POOR PROGNOSTIC FACTORS ON THE ACHIEVEMENT OF LOW DISEASE ACTIVITY OR REMISSION IN PATIENTS WITH RHEUMATOID ARTHRITIS?

L. Baganz[*, 1], A. Richter[1, 2], K. Albrecht[1], M. Schneider[3], G.-R. Burmester[4], A. Zink[1, 4], A. Strangfeld[1]

[1]German Rheumatism Research Center, Berlin, [2]Institute for Community Medicine, Greifswald, [3] Heinrich-Heine-University, Düsseldorf, [4]Charité University Medicine , Berlin, Germany

My abstract has been or will be presented at a scientific meeting during a 12 months period prior to EULAR 2018: No

Is the first author applying for a travel bursary and/or an award for undergraduate medical students?: No
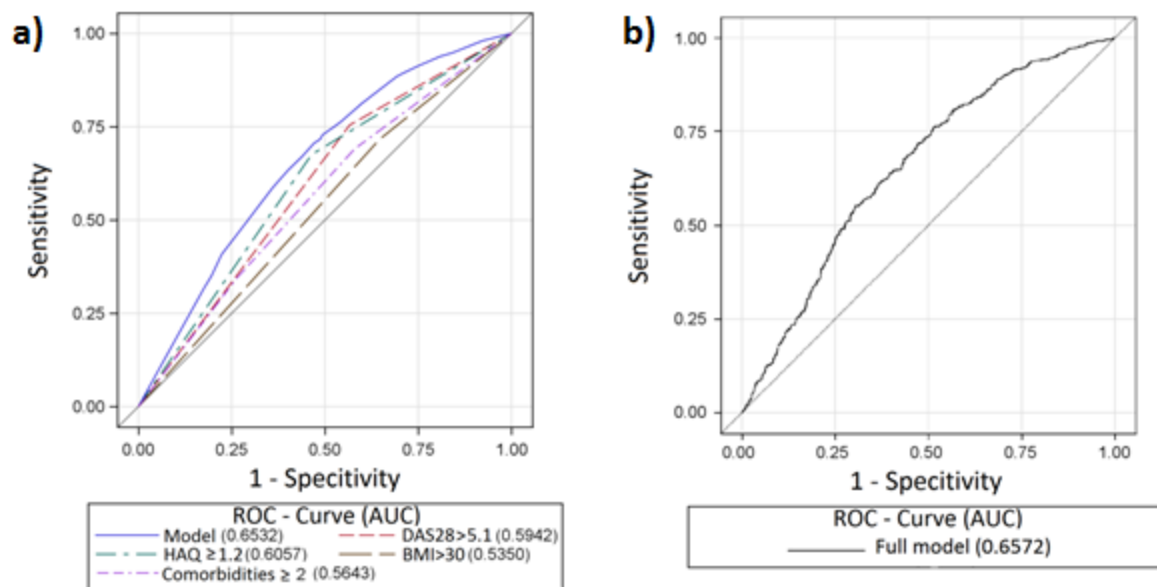
Background: Poor prognostic factors were initially developed using radiologic progression as outcome. In the 2016 update of the EULAR recommendations it is proposed to use these factors for decision whether or not a biologic should be started [1]. However, the treatment target is not radiologic progression but low disease activity (LDA) or remission.

Objectives: To investigate the impact of indicators of unfavorable prognosis on the achievement of LDA and remission in patients with RA.

Methods: Patients from the German biologics register RABBIT switching from 1st to 2nd csDMARD were studied. High disease activity (DAS28>5.1), autoantibodies (RF/ACPA positive), prevalent erosions, functional limitation (HAQ≥1.2), comorbidities (≥2), obesity (BMI>30kg/m^2), and smoking were evaluated as prognostic factors. Generalized regression analyses were applied to investigate the role of prognostic factors regarding the achievement of LDA (DAS28<3.2) or remission (DAS28<2.6). Receiver operating characteristic (ROC) curves were calculated to compare the ability of the prognostic factors (baseline values) to discriminate patients achieving LDA from those maintaining moderate or high disease activity within six months. The prognostic value of all factors was determined by the area under the ROC curve (AUC).

Results: A total of 1,613 patients were studied (mean age 58.9 years, mean disease duration 4.8 years). 35% had DAS28>5.1, 60% were RF/ACPA positive, 27% had erosions, 44% functional limitation, 37% ≥2 comorbidities, 32% were obese, and 26% current smokers. LDA was achieved by 33% of patients with DAS28>5.1, by 30% if also autoantibodies and erosions were present, and by 20% if DAS28>5.1, HAQ≥1.2, ≥2 comorbidities and obesity were present. DAS28>5.1 (OR 0.41 [95%CI 0.32;0.52]), HAQ≥1.2 (0.58 [0.46;0.74]), ≥2 comorbidities (0.66 [0.47 to 0.90]) and obesity (0.72 [0.57;0.91]) independently decreased the probability of LDA within six months. Current smoking (0.67 [0.48;0.93] was negatively associated with remission. RF/ACPA and erosions were not associated. The ROC curves for achieving LDA for the significant factors (DAS28>5.1, HAQ≥1.2, ≥2 comorbidities and obesity) and a model containing only these four factors are shown in figure (a). The AUC of the model is higher than the one of the single curves. The AUC for the full model (figure (b)) which was additionally adjusted for age, sex, autoantibodies, erosions, current smoking, therapy and time is similar to the one of the reduced model.

Image/graph:

a) ROC - Curve (AUC)
Model (0.6532) — DAS28>5.1 (0.5942)
HAQ ≥1.2 (0.6057) — BMI>30 (0.5350)
Comorbidities ≥ 2 (0.5643)

b) ROC - Curve (AUC)
Full model (0.6572)

Conclusions: High disease activity, functional limitation, comorbidities and obesity had significant negative impact on LDA and remission. They should be considered as poor prognostic factors in csDMARD-treated patients. It appears that a combination of the factors is better than using single ones.

References: 1.   [1] Smolen JS et al. Ann Rheum Dis 2017;76:960-977.

1.   Smolen JS, Landewé R, Bijlsma J, et al. EULAR recommendations for the management of rheumatoid arthritis with synthetic and biological disease-modifying antirheumatic drugs: 2016 update. Ann Rheum Dis 2017;76:960-977.