observed higher concentration of antibodies a-Sa and CEP-1 than in other groups.

Antibodies a-Sa were positive in 69% of RF(+) RA patients, in 37% of RF(-) RA patients, in 26% of UA patients and in 10% of healthy people. In 8 aCCP (-) and RF(-) patients we observed the presence of a-Sa; 3 of them were diagnosed with RF(-) RA with and 5 with UA. Anti-CEP-1 antibodies were positive in 77% of RF(+) RA patients, in 56% of RF(-) RA patients, in 4,5% of UA patients, but their presence were not observed in the healthy people. In 8 aCCP (-) and RF (-) patients we observed positive anti-CEP-1 antibodies; 6 of them were diagnosed with RA, 2 of them with UA. Anti-CEP-1 antibodies were positive in 50% of RF(-) RA patients, in whom there was no aCCP nor RF, and only in 4,5% of UA patients.

In case of marking a-Car-P, positive values were present in: the group of RF(+) RA in 40% of patients, in patients diagnosed with RF(-) RA in 6%, in case of UA in 22% of patients. In patients with RF(+) RA, positive anti-CarP antibodies are present statistically significantly more often than in the group of RF (-) RA patients ($p < 0,05$).

In case of marking hnRNP/RA33 and AFA no statistically significant differences between RF(+) RA, RF(-) RA and UA in their occurrence were observed. In patients with arthritis no correlation between smoking and analysed autoantibodies was observed. In smokers higher CRP concentration and ESR values was observed.

Conclusions: Our results suggest that a-Sa and CEP-1 parameters allow to differentiate RF(+) RA, RF(-) RA and UA, but do not differentiate UA from RF(-) RA. Marking CEP-1 in patients with early arthritis may help in differentiation between RF(-) RA and UA. Marking CEP-1 and a-Sa may be useful in diagnosing early arthritis patients. The presence of Anti-CarP antibodies in UA patients is probably considerable risk factor in RA development. Smoking cessation may contribute to decrease RA activity.

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FRI0021 PREDICTORS OF RHEUMATOID ARTHRITIS DEVELOPMENT IN PATIENTS WITH EARLY UNDIFFERENTIATED ARTHRITIS: A 2-YEARS FOLLOW-UP STUDY

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Background: Early treatment of rheumatoid arthritis (RA) improves longterm outcomes⁽¹⁾. However, at the beginning of the disease, some patients with RA fall within undifferentiated arthritis (UA) patients. Several studies have shown that almost half of patients with UA may experience spontaneous remission⁽²⁾. So, in order to prevent overtreatment and poor outcomes, the identification of predictors of RA development is desirable.

Objectives: To determine the frequency of patients with UA evolving into RA after 2 years of follow-up and the factors contributing to predict this outcome.

Methods: A prospective analysis of an early arthritis cohort of 1377 patients from 1993 to 2017 was undertaken. For this study, 2 years follow-up data of patients who presented with UA were analysed. A detailed baseline assessment was completed including clinical features, physical examination and laboratory tests. Patients were stratified in two groups based on progression to RA (according to physician's diagnosis) or to another disease (non-RA). First, differences between groups were tested using chi-squared and Student-t tests in the univariate analysis. Second, multivariate logistic regression models were employed to investigate the association between possible predictive factors and RA development.

Results: A total of 471 UA patients were included for analysis. Mean age was 48.7±17.5 years, 352 (74.9%) were females, and mean symptoms duration was 13.9±13.9 weeks. After 2 years of follow-up, 93 (19.7%) of UA patients evolved into RA. Meanwhile, 175 (37.2%) remained undifferentiated and 203 (43.1%) developed into other musculoskeletal diseases. In the univariate analysis, the presence of rheumatoid factor (RF) and anti-citrullinated peptides antibodies (ACPA), tender and swollen joint count, duration of morning stiffness, smoking, symmetry and ESR values were significantly associated with RA development. In the multivariate analysis, RF (OR=5,899; 95% CI 1,795–19,382), ACPA (OR=123,238; 95% CI 29,353–517,410) and swollen joint count (OR=1,233; 95% CI 1,048–1,450), remained significantly associated with RA development (table 1).

Abstract FRI0021 – Table 1. Independent predictors of RA development based on logistic regression model

	Odds ratio	95% C.I.	
		Lower	Upper
Physician Global Assessment (0–100)	1016	,983	1051
28 Tender Joint Count	,949	,852	1057
28 Swollen Joint Count	1233	1048	1450
ESR(mm/h)	1018	,992	1044
Race	,633	,021	19 250
Smoking	,851	,223	3245
Symmetry	,568	,145	2225
RF(IU/mL)	5899	1795	19 382
ACPA(IU/mL)	1 23 238	29 353	5 17 410

Conclusions: Approximately, 1 out of 5 patients with UA evolves into RA after 2 years of follow-up. Swollen joint count, and the presence of rheumatoid factor (RF) and anti-citrullinated peptides antibodies (ACPA) are independent predictors for the development of RA, supporting the early DMARDs initiation in such patients.

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FRI0022 RAPID AND SUSTAINED REMISSION CONTRIBUTES TO IMPROVED PSYCHOSOCIAL OUTCOMES AFTER 1 YEAR OF TREATMENT IN PATIENTS WITH EARLY RHEUMATOID ARTHRITIS: DATA FROM THE CARERA TRIAL

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Background: The goal of early rheumatoid arthritis (RA) treatment is to reach remission as soon as possible, as this initial treatment response is a strong predictor of long-term clinical outcomes. Rapidly reaching remission is not only clinically meaningful, it also matters from the patient's perspective.¹ Yet, the influence of an initial response on patients' future psychosocial functioning remains understudied in early RA.

Objectives: To explore the association between the initial clinical response of patients with early RA and their psychosocial functioning after 1 year of treatment.

Methods: We included patients with early RA (disease duration ≤1 year) who started first-time treatment within the Care in early RA (CareRA) trial.² Based on the speed of response defined as the response at week 16, and the stability of response evaluated from week 16 onwards until week 52 of treatment, we created 4 profiles of initial clinical response relevant to patients: persistent responders, secondary failures, delayed responders and non-responders (table 1). Having a response was defined as a disease activity score (DAS28CRP) <2.6 indicating remission. Psychosocial functioning was operationalized using relevant subscales of the Short-form 36 (SF-36) and the Revised Illness Perception Questionnaire (IPQ-R) (table 2). We built multiple linear regression models for each psychosocial outcome separately adjusted for confounding variables. Imputation using the Expectation-Maximisation method was performed for missing SF-36 and IPQ-R scores (range 22.2%>23.1%) only at week 52.

Results: The 333 included patients shared typical characteristics of an early RA population (69.5% being woman, mean(SD) age of 52.3 (13.0) years), with no differences in demographics between patients for the different response profiles. In almost all regression models, the initial clinical response profiles were identified as significant predictors for each psychosocial outcome at week 52 (table 2). A rapid and sustained response, when compared to having a relapse after initial response or a delayed response or no response at all, resulted in higher vitality, less interference with normal social activities, less problems with work or other daily activities because of emotional problems, an improved mental health, more positive beliefs about disease consequences, a higher belief in the effect of treatment, and a more coherent illness understanding.

Abstract FRI0022 – Table 1. Definitions of the self-created profiles of initial clinical response throughout the first year of treatment in patients with early rheumatoid arthritis.

Clinical response* profiles	Group size	Definition of the profiles
Persistent responders	n=140	Early response at week 16 and stability of this response over year 1
Secondary failures	n=92	Early response, but relapse between week 16 and week 52 of treatment
Delayed responders	n=71	Late response, between week 16 and week 52 of treatment
Non-responders	n=30	No response to treatment throughout year 1

* Having a response was defined as a disease activity score (DAS28CRP) <2.6 indicating remission.

Abstract FRI0022 – Table 2. The contribution of the initial clinical response to psychological outcomes (patient-reported) after 1 year of early RA treatment.

Psychosocial outcome at year 1	Number of patients	Persistent responders	Secondary failures	Delayed responders	Non-responders	Adjusted R square of the model
Vitality (SF-36)	n=326	REF	$\beta = -.169^{**}$ (-10.86, 2.85)	$\beta = -.177^{**}$ (-12.46, -3.26)	$\beta = -.270^{**}$ (-23.70, 11.41)	34.6%
Social functioning (SF-36)	n=327	REF	$\beta = -.121^{*}$ (-10.64, 0.78)	$\beta = -.170^{**}$ (-14.41, -3.15)	$\beta = -.325^{**}$ (-32.28, 17.13)	27.0%
Role emotional (SF-36)	n=324	REF	$\beta = -.137^{*}$ (-20.04, 2.49)	$\beta = -.229^{**}$ (-30.32, 10.57)	$\beta = -.199^{**}$ (-40.23, 12.96)	23.8%
Mental health (SF-36)	n=327	REF	$\beta = -.168^{**}$ (-9.71, -2.65)	$\beta = -.112^{*}$ (-8.53, -0.47)	$\beta = -.198^{**}$ (-17.13, -6.25)	37.5%
Consequences (IPQ-R)	n=325	REF	$\beta = .202^{**}$ (1.06, 2.98)	$\beta = .241^{**}$ (1.54, 3.74)	$\beta = .319^{**}$ (3.68, 6.70)	37.4%
Treatment control (IPQ-R)	n=326	REF	$\beta = -.202^{**}$ (-1.65, -0.46)	$\beta = -.221^{**}$ (-1.94, -0.57)	$\beta = -.196^{**}$ (-2.55, -0.71)	10.6%
Illness coherence (IPQ-R)	n=325	REF	$\beta = -.130^{**}$ (-1.83, -0.27)	$\beta = -.111^{*}$ (-1.87, -0.08)	$\beta = -.083$ (-2.27, 0.14)	36.6%

Note. SF-36: Short Form-36 items; IPQ-R: Revised Illness Perception Questionnaire; REF: Reference category: the beta values show the relative difference between each group and the persistent responders group (i.e., the group we chose as the reference category); β : standardized beta coefficient with 95% Confidence Interval; Regression analyses (enter method) were adjusted for age, gender, baseline disease activity, presence of depression, baseline value of the outcome and treatment strategy; Significant results in bold (** p < 0.01. * p < 0.05).

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FRI0023

FIVE-YEAR PROGRESSION OF RHEUMATOID ARTHRITIS DISEASE ACTIVITY AND QUALITY OF LIFE IN 2002 AND 2011. HAVE REDUCTIONS IN DISEASE ACTIVITY IN RECENT YEARS RESULTED IN IMPROVEMENTS IN QUALITY OF LIFE?

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Background: The treat-to-target (T2T) approach, with earlier, aggressive treatment has resulted in improvements in rheumatoid arthritis (RA) outcomes^{1,2}. Whether these improvements have translated into improvements in patient reported outcomes is less clear. Studies have indicated declines in pain and function as well as depression and anxiety. However, these studies are limited to short

follow-up periods or were restricted to cross-sectional, rather than longitudinal analyses.

Objectives: To assess changes in 5 year progression rates for disease activity and patient reported outcomes in a prospective cohort of early RA patients between 2002 and 2011.

Methods: The Early RA Network (ERAN) is a longitudinal prospective cohort study that recruited 1236 early RA patients from 2002 to 2011. DAS-28 and SF-36 were measured at baseline, 6 months, 12 months and then yearly. Multi-level linear regression were used to model 5 year progression rates of both DAS-28 and SF-36 in patients recruited between 2002–2011. Models controlled for sex and age and seropositivity at baseline. DMARD use at baseline was controlled for using propensity score weighting. Year of diagnosis was entered as a continuous variable, allowing for the mean of the outcome variables to be estimated for 2002 and 2011. Restricted cubic splines were used to account for non-linear progression over time.

Results: Disease activity for patients diagnosed in 2011 demonstrated a statistically significant decrease at year 5 compared to patients diagnosed in 2002 (5 year estimated mean difference –0.35; 95% CI 0.22–0.49, p<0.001). Using the SF-36 measure, Physical Function, Bodily Pain, Vitality (indicating fatigue) and Mental Health indicated similar levels at year-5 between those patients diagnosed in 2011 to those diagnosed in 2002 (p>0.05). Mental health was similar to the normalised population mean of 50, irrespective of year diagnosed. However, levels of vitality/fatigue, function and pain remain less favourable for all early RA patients over the first 5 years.

Conclusions: Although disease activity has shown a marked decline at 5 years between 2002 and 2011, there is little evidence that this has led to improvements of an equivalent magnitude in function, pain, fatigue and mental health. Treatment should also focus on improved function, pain management, fatigue and mental health as part of the T2T protocol.

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FRI0024

DO AGE AND EDUCATION INFLUENCE THE DISEASE ACTIVITY SCORE? AN EXPLORATIVE ANALYSIS IN THE NORWEGIAN COHORT STUDY NOR-DMARD

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Background: While ageing influences auto-immune inflammation and the structure of the joints, knowledge about its influence on appraisal of disease outcomes is more limited.