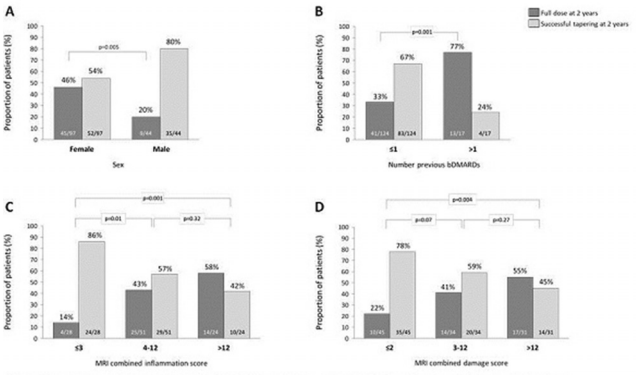

Abstract OP0038 – Figure 1 Observed association between potential predictors and the proportion patients eith successful tapering (i.e. less than full dose) versus full dose at year 2

Methods: One-hundred-and-forty-three patients with sustained disease activity score (DAS28-CRP)≤2.6 and no radiographic progression the previous year were included. bDMARD was reduced to 2/3 of standard dose at baseline, ½ after 16 weeks, and discontinued after 32 weeks. Patients who flared (defined as either DAS28-CRP≥2.6 and DAS28-CRP≥1.2 from baseline, or erosive progression on X-ray and/or MRI) stopped tapering and were escalated to the previous dose level.

Results: One-hundred-and-forty-one patients completed 2 year follow-up. At 2 years, 87 patients (62%) had successfully tapered bDMARDs, with 26 (18%) receiving 2/3 of standard dose, 39 (28%) ½ dose and 22 (16%) having discontinued; 54 patients (38%) were receiving full dose. DAS28-CRP$_{0-2yrs}$ was 0.1 ((−0.2)–0.4) (median(interquartile range)) and mean Total-Sharp-Score$_{0-2yrs}$ was 0.01 (1.15) (mean(SD)). Radiographic progression was observed in 9 patients (7%). Successful tapering was independently predicted by: ≤1 previous bDMARD, male gender, low baseline MRI combined inflammation score and low MRI combined damage score. Negative IgM-rheumatoid factor predicted successful discontinuation. The association between potential predictors and the proportion of patients with successful tapering of bDMARDs is shown in figure 1.

Conclusions: By implementing a clinical guideline, 62% of RA patients in sustained remission in routine care were successfully tapered, including 16% successfully discontinued at 2 years. Radiographic progression was rare. IgM-RF was an independent predictor for successful discontinuation of bDMARDs. Maximum one bDMARDs, male gender, and low baseline MRI combined inflammation and MRI combined damage scores were independent predictors for successful tapering.

Disclosure of Interest: None declared

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OP0039 HIGH DISEASE ACTIVITY AND DISABILITY AT ONE YEAR IN TWO CLUSTERS OF PATIENTS WITH RHEUMATOID ARTHRITIS DEFINING THEMSELVES AS IN AN ACCEPTABLE STATE AT TREATMENT INITIATION

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Background: A significant proportion of patients with rheumatoid arthritis (RA) define themselves as in a 'patient acceptable symptom state' (PASS) at methotrexate (MTX) initiation. Within this heterogeneous group, there are likely to be clinical phenotypes associated with poor outcome.

Objectives: To identify distinct phenotypes of symptoms within patients in PASS at baseline and to compare disability and disease activity scores of these patients over one year.

Methods: The Rheumatoid Arthritis Medication Study (RAMS) is a one year prospective cohort of patients with RA starting MTX. At baseline, patients reported demographics, completed the Health Assessment Questionnaire (HAQ), pain/fatigue visual analogue scales (VAS) and the Hospital Anxiety and Depression Scale (HADS). A research nurse conducted a 28 swollen and tender joint count and the Disease Activity Score (DAS28) was calculated. DAS28 and HAQ were assessed again at 12 months. Patients also answered the dichotomous question 'Is your current condition satisfactory, when you take your general functioning and your current pain into consideration?' Only those answering yes at baseline were included in the analysis. Phenotypes were identified using K-medians cluster analysis based on baseline swollen/tender joint count, HAQ, VAS-pain, VAS-fatigue and HADS-depression. The 'elbow method' was used to select the number of clusters. Quantile regression was used to compare the 12 month HAQ and DAS28 scores between clusters, controlling for age and gender.

Results: Five clusters were identified within the 300 patients in PASS at baseline (mean (sd) age=61.4 (12.1) years, 186 (62%) women) (table 1). Compared to Cluster 1, patients in higher clusters had worse HAQ (median difference (95% CI) vs Cluster 1: Cluster 2=0.36 (0.11, 0.61); Cluster 3=0.19 (-0.11, 0.49); Cluster 4=0.74 (0.47, 1.00); Cluster 5=0.89 (0.54, 1.24)) and worse DAS28 at 12 months (median difference (95% CI) vs Cluster 1: Cluster 2=0.43 (-0.06, 0.91); Cluster 3=0.40 (-0.19, 0.99); Cluster 4=0.89 (0.36, 1.41); Cluster 5=1.28 (0.59, 1.96).

Abstract OP0039 – Table 1 Baseline characteristics of the five clusters

		Baseline scores, Medians						Clinical characteristics matrix §					
Cluster	N	SJC28	TJC28	HAQ	Pain	Fatigue	Depr	SJC28	TJC28	HAQ	Pain	Fatigue	Depr
1	50	2	1	0	8	8	0	M	L	L	L	L	L
2	109	2	3	0.5	25	25	4	M	M	M	M	M	M
3	44	13.5	10.5	0.5	20	12.5	2	H	H	M	M	M	M
4	71	4	5	1.13	50	64	7	M	M	H	H	H	H
5	26	12	23	1.25	56.5	66	5	H	H	H	H	H	M

Depr = depression, measured using the Hospital Anxiety and Depression Scale, HAQ = Health Assessment Questionnaire, N = number, SJC28 = swollen joint count (28), TJC28 = tender joint count (28).§ - Low (L), Medium (M) and High (H) defined based on median and interquartile of each characteristic in the total cohort of patients in a PASS: SJC28: L=0-1, M=2-7, H=8-28; TJC28: L=0-1, M=1-7, H=8-28; HAQ: L=0.00-0.19, M=>0.19 & <1.13, H=1.13-3.00; pain: L=0-14, M=15-46, H=47-100; fatigue: L=0-10, M=11-55, H=56-100; depression: L= 0-1, M=2-6, H=7-14

Conclusions: Despite all patients reporting they were satisfied with their condition at baseline, five distinct clinical phenotypes were identified. These clusters can identify 'reticent' patients who are likely to have poor outcomes in the future.

Disclosure of Interest: None declared

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OP0040 SYNOVIAL CELL INFILTRATION IN ACPA-VE PATIENTS DISPLAYS SIMILAR SIGNATURES TO OTHER SERONEGATIVE INFLAMMATORY ARTHRITIS. RESULTS FROM THE PATHOBIOLOGY OF EARLY ARTHRITIS COHORT (PEAC)

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Background: There is increasing evidence to suggest that ACPA +ve and ACPA-ve RA are distinct diseases. Current data demonstrates overlap in classification criteria between ACPA-ve RA and other sero negative inflammatory arthritidies such as PsA. Associated with this is a variable prognosis and response to treatment for patients with ACPA-ve RA. Biomarkers capable of refining diagnosis and improving on current classification criteria early in the disease course for patients with ACPA-ve RA are thus urgently needed. Data examining the synovial pathophysiological relationship between PsA and ACPA ±RA is currently limited although has the potential to identify disease specific synovial cellular and molecular signatures.

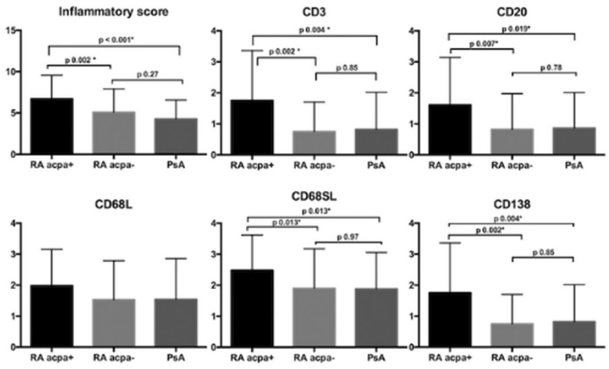
Objectives: Therefore, the aim of this study is to examine in a cohort of therapy naïve, early inflammatory arthritis patients, whether ACPA-ve RA can be defined at disease initiation according to synovial pathobiological signatures.

Methods: A total of 186 consecutive DMARD naïve inflammatory arthritis patients (disease duration <1 year) recruited as part of the multicentre PEAC study at Barts Health NHS Trust were evaluated. All patients underwent a baseline synovial biopsy of a clinically active joint along with collection of inflammatory markers (CRP). Following H and E staining, sections underwent immumohistochemical staining and semi-quantitative scoring (0–4) to determine the degree of CD20 +Bcells, CD3 +T cells, CD68 +lining (l) and sublining (sl) macrophage and CD138 +plasma cell infiltration. Sections were categorised into three pathotypes: (i) Fibroid(F):(CD68 SL <2 and or CD3, CD20, CD138 <1), (ii) Myeloid(M): (CD68SL >2, CD20 <1 and or CD3 >1) and (iii) Lymphoid(L):(grade 2–3 CD20 +aggregates, CD20 >2).

Results: 90/186 patients were classified as ACPA+ve RA, 55/186 as ACPA-ve RA and 41/186 as PsA. 80% of synovial samples were collected from small joints (wrist, MCP, PIP). All 186 samples were suitable for analysis. Results confirmed that C-reactive protein (CRP) as inflammatory marker does not differentiate between subgroups (p 0.41). Significantly higher degree of immune cell infiltration was seen between ACPA+ve vs ACPA-ve and ACPA+ve vs PsA but not between ACPA-ve and PsA (figure 1). When grouping patient between clinical subgroups

(ACPA+ve vs ACPA-ve vs PsA) and pathotypes (fibroid, myeloid and lymphoid) (table1) we demonstrated a significantly higher prevalence of a lymphoid pathotype in ACPA+ve RA vs ACPA-ve or PsA.

	RA acpa + N90 9ungraded	RA acpa- N55 12ungraded	PsA N41 0ungraded	*P value* fisher test	*P value* acpa+vs acpa-	*P value* acpa+vs PsA	*P value* acpa- vs PsA
F	15 (16%)	17 (31%)	15 (36%)	**0.01***	**0.03***	**0.005***	0.41
M	25 (28%)	14 (25%)	11 (27%)				
L	41 (45%)	12 (22%)	10 (24%)				



Conclusions: Our results suggest that the synovial cell infiltrate (B cells, T cells, macrophages and plasma cells) in ACPA-ve RA is significantly different from ACPA +ve patients. They also suggest shared pathophysiological mechanisms between PsA and ACPA-ve RA and support a role for future refinement of diagnosis of ACPA-ve RA according to synovial pathobiology.

Disclosure of Interest: None declared
DOI: 10.1136/annrheumdis-2018-eular.3489

OP0041 DOES TREATMENT STRATEGY INFLUENCE THE ABILITY TO ACHIEVE AND SUSTAIN DMARD-FREE REMISSION IN RA?; RESULTS OF A LONGITUDINAL STUDY COMPARING AN INTENSIVE DAS-STEERED TREATMENT STRATEGY WITH TREAT-TO-TARGET IN ROUTINE CARE

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Background: Disease-modifying anti-rheumatic drug (DMARD)-free remission is an achievable outcome in rheumatoid arthritis (RA). The influence of treatment strategy on the ability to achieve and sustain this outcome is unclear. Therefore, we compared the prevalence and sustenance of DMARD-free remission in RA-patients treated in a trial with intensive DAS-steered care aimed at DMARD-free remission versus RA-patients treated to target in routine care.
Methods: 279 consecutive RA-patients (2010-criteria), diagnosed in the Leiden University Medical Centre between March 2007-September 2010, were studied. Of these, 155 participated in a DAS <1.6 steered trial aimed at DMARD-free remission (IMPROVED-study). These patients were initially treated with high-dose prednisone (60 mg/day) and methotrexate. Medication was intensified in case of a DAS ≥1.6 and tapered in case of a DAS <1.6. The other 124 RA-patients were treated according to routine care, consisting of initial methotrexate and subsequent DAS <2.4 steered treatment. The median follow-up was 7.8 years. Medical records were studied on achieving DMARD-free remission, defined as the absence of synovitis for ≥1 year after DMARD-cessation, and 'late flares', defined as recurrence of clinical synovitis ≥1 year after DMARD-cessation. Sustained DMARD-free remission was defined as the sustained absence of clinical synovitis after DMARD-cessation for ≥1 year *and* the total follow-up duration; i.e. patients with a late flare were not in this group. Percentages of remission and late flares were compared between the two treatment strategies, in all patients and after stratification by ACPA.
Results: Patients receiving intensive treatment were more often ACPA-positive (59% vs 40%). DMARD-free remission was achieved by 35% of patients receiving intensive treatment and by 29% of patients receiving routine care (HR 1.2, 95% CI: 0.8 to 1.8). Within the ACPA-positive and ACPA-negative strata patient characteristics were similar, except for a younger age in patients receiving intensive treatment. Within ACPA-positive patients, DMARD-free remission was achieved more often in the intensive treatment group than in the routine care group (25% vs 6%, HR 4.9, 95%: CI: 1.4 to 17, corrected for age). In ACPA-negative patients no differences were observed (49% vs 44%, HR 1.1, 95% CI: 0.6 to 1.8, corrected for age). A late flare occurred in 20% of patients receiving intensive treatment and in 8% of patients receiving routine care (HR 2.3, 95% CI: 0.6 to 8.3). After excluding late flares from the remission group, the prevalence of DMARD-free *sustained* remission was not different for both treatment strategies in the total group (28% vs 27%, HR 1.0, 95% CI: 0.6 to 1.5). Also in the ACPA-positive group no significant effect remained (17% vs 6%, HR 3.1, 95% CI: 0.9 to 11, corrected for age).
Conclusions: An intensive treatment strategy was not associated with a higher prevalence of DMARD-free sustained remission compared to up-to-date routine treatment. Within ACPA-positive RA, intensive treatment resulted in more remission but also in more late flares. Together these data do not provide evidence to prioritise the studied intensive treatment strategy above current routine care.
Disclosure of Interest: None declared
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OP0042 IN ACPA POSITIVE AT-RISK INDIVIDUALS, WHICH MRI AND US FINDINGS BEST PREDICT DEVELOPMENT OF CLINICAL SYNOVITIS?

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Background: ACPA +individuals with non-specific MSK symptoms are at risk of inflammatory arthritis (IA) and may benefit from early intervention. Clinical, serological and US markers have previously been assessed to determine risk of progression.[1]
Objectives: Evaluate the value of MR and US imaging in characterising and quantifying risk in a large ACPA +cohort.
Methods: Eligible ACPA +individuals without clinical synovitis had gadolinium enhanced 3.0 T MRI of the dominant hand and wrist. Images were scored by 2 radiologists for synovitis, bone marrow oedema (BME), erosions and tenosynovitis (TSV) according to OMERACT RAMRIS. Joint counts for each abnormality at each joint were corrected for age using a healthy controls reference range.[2] US of the same regions were scored using OMERACT definitions. Maximum MRI and US abnormality scores observed per patient across all joints scored were dichotomised <2,≥2. Potential associations between baseline US (greyscale (GS) and powerDoppler (PD)) and MRI findings and i) progression to IA and ii) development of clinical synovitis within a joint were identified using Cox and penalised regression.
Results: Imaging of 98 individuals (mean age 47, 69% female) was available. 30% (29/98) progressed to IA. Median time to progression was 31 weeks (IQR 24, 67). BME and erosions scores≥2 were reported in 10%, preferential location to the carpal bones/wrist joints. Synovitis score ≥2 was present in 9%, preferential location at MCP5 and radial carpal/intercarpal joints. TSV was the most frequent reported abnormality with 22% scoring ≥2, 40% scoring 1. US GS and PD scores≥2 were reported in 23% and 9% respectively. The unadjusted analysis HRs for all imaging abnormalities were high, indicating potential association with risk of progression. Controlling for variables, MRI TSV was associated with time to IA with an increased HR. US GS and PD were also independently associated with time to progression and confirmed on penalised regression, table 1. At the joint level MRI TSV, BME and US GS were associated with the risk of progression to clinical synovitis, HR=7.03 p<0.001, HR 4.22 p=0.076 and HR 8.04 p<0.001 respectively.

Abstract OP0042 – Table 1. Patient-level Cox regression proportional hazard modelling of associations between maximum observed score per patient for baseline MRI abnormalities and time to IA (n=95)

Abnormality	No IA% (n=66)	IA% (n=29)	Unadjusted HR (90% CI),P value	Adjusted HR (90% CI),P value	Penalised HR
Small joint tenderness	44(29)	55(16)	1.60 (0.87,2.97), p=0.207	1.20 (0.58,2.46), p=0.679	1
RF and/or ACPA>3ULN	83(55)	93(27)	2.14 (0.64,7.16), p=0.301	1.02 (0.27,3.80), p=0.981	1
EMS≥30 min	27(18)	45(13)	2.00 (1.08,3.71), p=0.064	1.52 (0.69,3.37), p=0.384	1
US PD≥2	2 (1)	28(8)	7.21 (3.62,14.36), p<0.001	5.09 (1.93,13.44), p=0.006	4.37
US GS≥2	11(7)	52(15)	4.97 (2.69,9.19), p<0.001	2.69 (1.14,6.34), p=0.059	2.17
MRI erosion≥2	6 (4)	17(5)	2.15 (0.96,4.82), p=0.120	0.59 (0.20,1.76), p=0.431	1
MRI BME≥2	8 (5)	17(5)	2.30 (1.01,5.23), p=0.097	1.55 (0.56,4.27), p=0.482	1
MRI synovitis≥2	3 (2)	24(7)	4.22 (2.03,8.75), p=0.001	1.08 (0.46,2.54), p=0.881	1
MRI TSV≥2	14(9)	41(12)	3.51 (1.89,6.55), p=0.001	4.02 (1.91,8.44), p=0.002	3.16