function (HAQ<0.5) was achieved in 33% (530/1590) of all patients. Autoantibody-positivity was also not associated with HAQ<0.5 (HR1.05, 95%CI 0.71;1.57).

Table 1 Patient characteristics at baseline

Characteristic	All RA-patients n=1,826		Autoantibody-positive n=1,629		Autoantibody-negative n=197	
	Values available	Summary statistics	Values available	Summary statistics	Values available	Summary statistics
ACPA (positivity), n (%)	1,821	869 (75)	924	869 (90)	197	0 (0)
RF (positivity), n (%)	1,810	1,554 (85)	1,613	1,554 (96)	197	0 (0)
Gender (female), n (%)	1,814	1,429 (79)	1,620	1,288 (80)	194	141 (73)
Age at diagnosis (years), mean ±SD	1,815	48±13	1,619	47±13	197	54±16
Symptom duration (months), median (IQR)	1,826	15 (6-36)	1,629	18 (7-36)	197	7 (3-17)
Visit count, mean ±SD	4,265	3.14±1.05	3,782	3.13±1.02	483	3.27±1.24
Follow-up duration (months), mean ±SD	1,826	4.2±1.2	1,629	4.2±1.2	197	4.2±1.1
Cigarette smoking, n (%)	1,602		1,461		141	
Never		1,353 (85)		1,250 (86)		103 (73)
Current		158 (10)		140 (10)		18 (13)
Post		91 (6)		71 (5)		20 (14)
ESR (mm/hr), median (IQR)	1,588	51 (29-85)	1,413	55 (31-85)	175	30 (15-48)
CRP (mg/dL), median (IQR)	1,498	21 (0-49)	1,324	24 (11-52)	154	10 (1-24)
VAS, median (IQR)	1,357	50 (0-75)	1,212	50 (1)	145	50 (15-75)
SIC in all joints, median (IQR)	1,664	5 (2-10)	1,492	5 (2-10)	172	6 (3-11)
RAI, median (IQR)	1,661	9 (5-16)	1,489	10 (5-16)	172	6 (4-9.5)
DAS, mean ±SD	1,078	3.8±1.1	979	3.9±1.0	117	3.4±1.1
HAQ, median (IQR)	1,505	1.0 (0.6-1.6)	1,384	1.0 (0.6-1.6)	121	1.1 (0.5-1.6)
First-line treatment strategy:						
MTX monotherapy, n (%)	1,826	653 (36)	1,629	549 (34)	197	104 (53)
MTX & prednisone, n (%)	1,826	806 (44)	1,629	728 (45)	197	78 (40)
MTX & synthetic DMARD, n (%)	1,826	351 (19)	1,629	338 (21)	197	13 (7)
MTX & biological DMARD, n (%)	1,826	16 (1)	1,629	14 (1)	197	2 (1)

ESR data are mean and SD or median and interquartile range (IQR); 75th percentile; ACPA, anti-citrullinated protein antibody; RF, rheumatoid factor; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein; VAS, visual analogue scale general health patient; SIC, swollen joint count on a 44-joint count; RAI, Ritchie articular index on a 53-joint count; DAS, disease activity score (DAS) on a 44-joint count; HAQ, health assessment questionnaire; DMARD, Simplified Disease Activity Index; MTX, methotrexate; DMARD, disease-modifying anti-rheumatic drug.

Conclusions: In conclusion, we found that autoantibody status was not associated with early remission in newly diagnosed RA-patients receiving methotrexate in real-world clinical practice. These results do not support the hypothesis that treatment should be tailored to "autoantibody status" when it comes to initiating methotrexate therapy as first-line anti-rheumatic treatment. Rather, our results indicate that that methotrexate is effective as primary anchor drug regardless of autoantibody status.

Disclosure of Interest: None declared

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FRI0644

THE USE OF MRI-DETECTED SYNOVITIS TO DETERMINE THE NUMBER OF INVOLVED JOINTS FOR THE 2010 ACR/EULAR CLASSIFICATION CRITERIA FOR RHEUMATOID ARTHRITIS – IS IT OF ADDITIONAL BENEFIT?

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Background: The 2010 ACR/EULAR classification criteria have been developed, as early classification of Rheumatoid Arthritis (RA) is important. The 2010-criteria states that imaging can be used to determine the number of joints with synovitis. This seems reasonable as previous studies on Magnetic Resonance Imaging (MRI) in early arthritis patients have shown that synovitis is present in a substantial number of joints that were neither swollen nor tender at clinical examination. Although the development of the 2010-criteria was primarily data-driven, the suggestion to also use advanced imaging modalities to detect synovitis was based on expert opinion. Scientific data supporting the use of MRI is lacking.

Objectives: To assess the value of MRI-detected synovitis to determine the number of involved joints on the performance of the 2010-ACR/EULAR classification criteria for RA.

Methods: 277 consecutive patients with a clinical diagnosis of RA or undifferentiated arthritis (UA) were studied. They underwent contrast enhanced 1.5T MRI of MCP-, wrist- and MTP-joints at baseline. Two outcomes were studied after 1 year follow-up: disease modifying anti-rheumatic drugs (DMARD)-initiation and fulfilling the 1987-criteria. Test characteristics were calculated when the number of involved joints was determined with and without MRI-detected synovitis.

Results: At baseline, 143 of 277 patients did not fulfil the 2010-criteria when the number of involved joints was determined by clinical evaluation of swelling and tenderness. When MRI-detected synovitis was also considered 69 patients had increased joint counts. Of these, 36 patients received more points for the item 'number of involved joints' and 14 reached ≥6 points and now fulfilled the 2010-criteria for RA. Thus, 10% of patients that were formally classified as UA were additionally classified as having RA.

Without considering MRI-detected synovitis, the sensitivity of the 2010-criteria was 62% and the specificity 90%, for DMARD initiation as outcome. With the addition of MRI-detected synovitis, the sensitivity increased to 67% and the specificity decreased to 84%. The AUC changed from 0.76 to 0.75. The net proportion of correctly reclassified patients was -2.4%. Of the additionally classified patients, 64% (9/14) were started on DMARDs and were considered true positives, whereas 36% (5/14) were not treated with DMARDs and developed alternative clinical diagnoses during the first year.

Results for the outcome 1987-criteria fulfilment after 1-year were similar. The sensitivity changed from 79% to 81% and the specificity from 78% to 71% the proportion or correctly reclassified patients was -5.1%.

Conclusions: To our knowledge, this study is the first providing evidence on the value of MRI-detected synovitis in addition to tender and swollen joints for the classification of RA. We did not find an increased accuracy of the 2010 criteria when incorporating MRI-detected synovitis. Further research on this subject in other longitudinal cohorts is needed, but at present there is no scientific proof that MRI-detected synovitis is of additional benefit for classifying RA.

Disclosure of Interest: None declared

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FRI0645

ANTI-DRUG ANTIBODIES TO CERTOLIZUMAB PEGOL ARE ASSOCIATED WITH LOW DRUG LEVELS AND REDUCED CLINICAL RESPONSE AT 3 MONTHS IN PATIENTS WITH INFLAMMATORY JOINT DISEASES. DATA FROM THE NOR-DMARD STUDY.

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Background: Anti-drug antibodies (ADAb) to biological drugs predispose patients to low drug levels and lack of treatment response. For certolizumab pegol (CP) knowledge about the frequency and clinical relevance of ADAb is limited in patients with inflammatory joint diseases (IJD).

Objectives: To assess the frequency and clinical relevance of early ADAb development in patients with inflammatory joint diseases treated with CP.

Methods: Patients from the NOR-DMARD study (n=310) with a clinical diagnosis of rheumatoid arthritis (RA, n=91), psoriatic arthritis (PsA, n=61), axial spondyloarthritis (axSpA, n=116) and other IJD (42) starting treatment with CP, who had available biobank sample at 3 months follow-up, were included. Serum samples are non-through samples collected at 3 months. Drug concentrations were analysed using an in-house immunofluorometric assay automated on the AutoDEL-FIA immunoassay platform. ADAb was detected by a principal assay measuring neutralising ADAb and two confirmational tests (antigen-bridging test and a 3-step immunofluorometric assay). Patients with RA, PsA and axSpA were included in response analyses. Treatment response was defined by EULAR good/moderate response in RA, DAS28 improvement ≥0.6 in PsA, and ASDAS clinically important improvement (CII) in axSpA.

Results: After 3 months of treatment, 19 of 310 (6.1%) patients were ADAb positive (5 RA, 4 PsA, 6 axSpA and 4 other IJD). ADAb positive patients had significantly lower CP levels than ADAb negative patients, median 1.0 (IQR 0.2–6.8) vs 34.4 (IQR 21.2–44.7) mg/L (P<0.001). Response data were available for 245 patients. Of these, only 1/11 (9%) ADAb-positive patients was classified as a responder, while 10/11 (91%) were non-responders. Among ADAb-negative patients with response data, 129/234 (55%) were responders, while 105/234 (45%) were non-responders.

Conclusions: ADAb against CP were detected in 6.1% of patients after 3 months of treatment and were associated with low drug levels and reduced treatment response. These results suggest that drug levels and ADAb may be important for monitoring efficacy of treatment with TNF inhibitors, but the clinical significance needs to be examined in randomised clinical strategy trials.

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FRI0646

SYNOVIAL TISSUE HISTOPATHOLOGY FINDINGS IN EARLY RA. IS IT USEFUL? ANALYSIS OF THE BELGIAN CAP48 COHORT.

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Background: The development of ultrasound-guided synovial biopsy will enable synovial tissue collection from small joints and will facilitate histopathological studies, thus improving the understanding of early rheumatoid arthritis (ERA). The CAP48 cohort is an original multicentre prospective observational study of early

Rheumatoid Arthritis (RA) patients up to 50 years old supported by a charity program of the Belgian French speaking radio-television (RTBF).

Objectives: The objectives of this cohort are to observe if a tight control favour remission at 6 months and to define synovial markers for severity and response to therapy.

Methods: RA patients fulfilling the ACR/EULAR 2010 criteria and naïve to DMARDs therapy were recruited. Synovial biopsies before treatment were obtained using an ultrasound guided needle biopsy (US-NB) of the small joints or miniarthroscopy of the knee. RA disease activity measures including DAS28CRP domains were evaluated every 3 months and treatment was adapted by the treating physician. Tissues were assessed for quality. Retrieved tissue was fixed, stained and paraffin embedded for blinded tissue pathology description.

Results: A synovial biopsy was performed in 37 patients using US-NB in n patients. Patients were classified according 4 types of synovial histopathology findings. Baseline characteristics of the cohort is summarized in table 1. All patients in the diffuse lymphoid group were ACPA negative and the majority of the ACPA positive patients were classified in the pauci immune and fibrous group. As shown in figure 1, the pauci immune ERA group showed lower DAS28-CRP response than the other groups.

Table 1

	All patients n=37	Group 'Diffuse' n=17	Group 'Nodules' n=7	Group 'Pauci- Immun' 'Fibrous' n=13
Age mean (SD)	34.4 (± 1.9)	31.3 (± 2.9)	36.1 (± 4.4)	33.0 (± 5.8)
Gender	30F/7M	14F/3M	5F/2M	11F/2M
ACPA % (n=)	37.8% (n= 14)	0% (n=0)	57.1% (n=4)	76.9% (n=10)
RF % (n=)	48.6% (n=18)	11.8% (n=2)	85.7% (n=6)	76.9% (n=10)
Erosion % (n=)	35.1% (n=13)	17.6% (n=3)	57.1% (n=4)	38.4% (n=5)
Baseline DAS28-CRP	4.60 (± 0.23)	4.52 (± 1.50)	5.00 (± 1.37)	4.76 (± 1.44)

Conclusions: Synovial tissue analysis could provide a step change towards personalized medicine in daily clinical practice for disease stratification and treatment selection of ERA. In the CAP48 cohort, a high number of these young and ERA patients achieved remission at 6 months but a lower response was observed in the pauci immune group. Further analyses are ongoing to define individual synovial markers of severity and response.

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FRI0647

ESTIMATION OF MINIMUM CLINICALLY IMPORTANT DIFFERENCE IN FIBROMYALGIA FOR FIQR USING BPI AS THE ANCHOR MEASURE

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Background: The FIQ (Fibromyalgia Impact Questionnaire) was first published in 1991 and had 19 items which were recalled over a week. The scoring system is highly reliable and is recognised as an outcome measure that covers the multiple domains of Fibromyalgia¹. A prior study by Benett et al² have shown that 14% change in the FIQ total score represents the Minimum Clinically Important Difference(MCID) in the Fibromyalgia. The FIQ was revised in 2009 to the 20 item

Fibromyalgia Impact Questionnaire Revised or FIQR. However, there has been no study done for assessing the MCID of the FIQR in Fibromyalgia.

Objectives: The aim of our study is to estimate the MCID for Fibromyalgia Impact Questionnaire Revised using anchor-based methodology with average pain score on Brief Pain Inventory as the anchor.

Methods: We have used data from our prospectively followed cohort of fibromyalgia patients. They were treated as per protocol with duloxetine in escalating doses. Data from this cohort was used to estimate the MCID for the FIQR using anchor-based methodology. The anchor used was the average pain score on Brief Pain Inventory(BPI). The MCID for BPI average pain score was calculated by Mease et al to be 30%³. Thus, all patients in our cohort having an improvement of greater than 30 % were classified as responders. All other patients were non-responders. Within these two groups, the means and standard deviations of the FIQR scores at baseline and at the end of treatment were obtained. The MCID was calculated as the difference in the unadjusted mean change in the FIQR scores between the "non-responder" group and the group with "responder group". It was also expressed as a percentage reduction from the mean baseline FIQR.

Results: Table 1 shows the mean and standard deviation of FIQR scores at baseline, endpoint and the mean change along with the calculated MCID. Table 1

Anchor status	No. of patients	Baseline Mean ± SD	Endpoint mean ± SD	Mean change ± SEM	MCID
Responder	58	58.50 ± 19.03	26.62 ± 14.76	31.88 ± 2.53	27.04
Non-responders	18	62.17 ± 16.97	57.33 ± 13.00	4.83 ± 3.75	

Conclusions: Based on our data, we suggest that a "27.04 point" or "45.5 %" improvement on the FIQR score represents the minimum clinically important difference for FIQR in fibromyalgia patients presenting with moderate to severe pain. Strengths of this work include the usage of prospectively followed patient population for analysis, protocol-based treatment with duloxetine and representation of a local population which more is applicable to our clinical practice. That MCID obtained for the FIQR score is much higher than the 14 % which was the MCID obtained for the older FIQ score may suggest a population-based variation in improvement of outcome measures.

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FRI0648

DIRECTLY COMPARING LATENT FUNCTIONAL ABILITY IN ADOLESCENTS WITH JIA USING THE CHAQ AND HAQ: AN ITEM RESPONSE THEORY ANALYSIS

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Background: Measuring and comparing functional ability in adolescents with JIA is challenging due to the use of multiple questionnaires, including the proxy-completed Childhood Health Assessment Questionnaire (P-CHAQ), the adolescent version (A-CHAQ) and the Health Assessment Questionnaire (HAQ).

Item response theory (IRT) allows items on multiple questionnaires to be linked to an underlying continuous variable. This allows scores to be corrected for characteristics of the administered items, thus making them comparable between different questionnaires. Recently, a common reporting metric for functional ability was developed in a combined dataset of 16386 patients with various inflammatory rheumatic diseases, including 1029 paediatric patients with JIA.

Objectives: i) To cross-validate the item response models using three functional ability questionnaires in adolescents with JIA. ii) To assess agreement between overall function scores obtained from the different questionnaires.

Methods: Adolescents aged 11 to 17 with JIA were enrolled to a UK, multicentre inception cohort, the Childhood Arthritis Prospective Study (CAPS). In a sub-