(DMARDs) in patients with rheumatoid arthritis (RA), treatment adoptions are recommended if no improvement in disease activity is seen within 3 months, or if the treatment target has not been reached by 6 months.¹ A pooled analyses from several pivotal RCTs showed that RA patients who did not achieve a minor treatment response by 3 months were unlikely to reach the treatment target by 6 months.²

Objectives: To examine what level of treatment response is needed after 3 months of therapy in order to achieve the treatment target of remission (REM) or low disease activity (LDA) by 6 months in a routine clinical setting.

Methods: Data were provided by NOR-DMARD, a prospective, multicentre, observational study. We selected RA-patients enrolled between December 2000 and November 2012, who were biological DMARD-naïve and had a moderate or high disease activity (MDA or HDA, respectively) according to the Simplified Disease Activity Index (SDAI) when initiating therapy. All analyses were performed for the total group of included patients (n=1610), as well as for the following sub-groups: disease duration over (n=895) or under (n=681) 12 months, baseline SDAI MDA (n=825) or HDA (n=785), DMARD-naïve patients starting methotrexate (MTX) (n=537) and patients starting tumour necrosis factor inhibitor (TNFi) (n=248). We used a diagnostic test approach, created receiver operating characteristic curves and generated sensitivities, specificities and likelihood ratios (LRs) for all improvement cut-points (0–100%) at the 3-month visit. Furthermore, we tested the ability of established response criteria (SDAI 50/70/85 response) at 3 months to predict the desired target of SDAI remission or SDAI LDA at 6 months.

Results: At inclusion median (IQR) disease duration was 2 (0.2–8.8) years and mean (SD) SDAI was 28.3 (12.8). At 6 months 46.8% of all patients had achieved LDA and 10.8% had reached remission. Not achieving a minor treatment response (SDAI 50% response) by 3 months was associated with decreased probability of reaching remission at 6 months (LR- 0.27), but gave little prognostic information regarding the probability of reaching LDA (LR- 0.49). Patients with HDA at baseline who did not achieve at least 50% improvement in disease activity by 3 months had very low probability of reaching the treatment target by 6 months (LR- 0.15 for remission and LR- 0.30 for LDA). SDAI 85% response at 3 months was predictive of reaching the treatment target at 6 months (LR+ 6.56 for remission and LR+ of 6.45 for LDA). For the total group of patients, a reduction in SDAI of 60.2% was needed at 3 months to predict LDA at 6 months with 80% specificity, while 69.2% improvement was necessary to predict remission.

Conclusions: These results from a routine clinical setting confirm results from RCTs demonstrating a predictive association between treatment response at 3 months and achievement of the treatment target by 6 months in RA-patients. Assessments at 3 months can inform clinicians to continue or adjust ongoing DMARD-therapy in a treat-to-target strategy aiming for remission or LDA by 6 months.

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Disclosure of Interest: V. Norvang: None declared, I. Olsen: None declared,

E. Kristianslund: None declared, T. Uhlig: None declared, T. Kvien Consultant for: AbbVie, Biogen, BMS, Boehringer, Ingelheim, Celltrion, Eli Lilly, Epirus, Janssen, Merck-Serono, MSD, Mundipharma, Novartis, Oktal, Orion Pharma, Hospira/Pfizer, Roche, Sandoz, UCB, D. Aletaha Consultant for: Abbvie, BMS, Eli Lilly, Janssen, MSD, Pfizer Inc, Roche, UCB, Speakers bureau: Abbvie, BMS, Eli Lilly, Janssen, MSD, Pfizer Inc, Roche, UCB, J. Smolen Grant/research support from: AbbVie, Amgen, AstraZeneca, BMS, Celltrion, Janssen, Lilly, MSD, Novartis-Sandoz, Pfizer, Roche, Samsung, UCB, Consultant for: AbbVie, Amgen, AstraZeneca, BMS, Celltrion, Janssen, Lilly, MSD, Novartis-Sandoz, Pfizer, Roche, Samsung, UCB, E. Haavardsholm Grant/research support from: AbbVie, Pfizer, Roche, MSD, UCB, Consultant for: AbbVie, Pfizer, Roche, Eli Lilly, Celgene, UCB
DOI: 10.1136/annrheumdis-2017-eular.2900

THU0071 RADIOGRAPHIC PROGRESSION IN EARLY RHEUMATOID ARTHRITIS PATIENTS FOLLOWING INITIAL COMBINATION VERSUS STEP-UP TREAT TO TARGET THERAPY IN DAILY CLINICAL PRACTICE: RESULTS FROM THE DREAM REGISTRY

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Background: Early and aggressive targeted treatment with disease modifying anti-rheumatic drugs (DMARDs) has been shown to lead to substantial reductions in disease activity (1,2) and radiologic damage in patients with early rheumatoid arthritis (RA) (3,4).

Objectives: The aim of this study was to compare the first-year radiographic progression rates between a treat-to-target (T2T) strategy with initial combination therapy (strategy II) versus an initial step-up monotherapy (strategy I).

Methods: A total of 128 patients from strategy II was individually matched with 128 patients from strategy I on sex, age (± 5 yrs.) and baseline disease activity (± 0.5 on the DAS28). Differences in radiographic progression scores and the number of patients experiencing a minimal clinically important difference (≥ 5 SHS points; MCID) between both strategies were tested with Mann Whitney U test and chi-square test. Next, linear and logistic regression analyses were performed to examine which baseline variables were associated with radiographic progression scores and the probability of experiencing an MCID within 1 year.

Results: Patients with initial combination therapy had slightly higher baseline disease activity scores and pain scores, but better mental health scores. Patients with initial monotherapy had significantly more, and more frequently clinically relevant, radiographic progression after one year. Experiencing a MCID was associated with fewer tender joints ($p=0.05$) and higher ESR ($p=0.02$) at baseline.

Conclusions: Excellent radiographic outcome was achieved for patients treated according to a protocolled T2T strategy in daily clinical practice. Patients treated with initial monotherapy had significantly more short-term radiographic progression than patients treated with initial combination therapy.

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Acknowledgements: We would like to thank all the patients, rheumatology nurses, and rheumatologists who participated in our study.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.1638

THU0072 RISK OF REVISION, PROSTHETIC JOINT INFECTION AND DEATH FOLLOWING TOTAL HIP OR KNEE ARTHROPLASTY IN PATIENTS WITH RHEUMATOID ARTHRITIS – A NATIONWIDE COHORT STUDY FROM DENMARK

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Background: Studies have shown that rheumatoid arthritis (RA) patients are at increased risk of prosthetic joint infection (PJI) but with non-uniform results for mortality risk, following total hip and knee arthroplasty (THA and TKA, respectively). The impact of biological DMARD (bDMARD) treatment on the risk of these outcomes is unknown.

Objectives: To investigate the risk of revision, PJI and death following THA and TKA in 1) RA compared with osteoarthritis (OA) patients and 2) RA patients treated with bDMARDs compared with those not.

Methods: Register-based cohort study linking the National Patient Register, DANBIO, Danish Hip Arthroplasty Register and Danish Knee Arthroplasty Register.

Follow-up: from date of THA/TKA to date of any of the outcomes, to 10 years of follow-up or end of 2014, whichever came first.

Statistics: Fine-Gray competing risks analyses to calculate confounder adjusted sub-Hazard Ratios (aSHR) with 95% confidence intervals (95% CI) for revision and PJI; Cox proportional hazard models to calculate aHR for risk of death.

Results: We identified 3913 RA and 120 499 OA patients. In DANBIO, 360 bDMARD and 1586 not-bDMARD treated RA patients were eligible for analysis. See Table for results.

Conclusions: We report an increased risk of death and PJI but a lower risk of revision in patients with RA compared with OA following THA and TKA. In RA patients, prednisolone, but not bDMARD treatment within the year prior and/or following THA and TKA was associated with an increased risk of death.

Disclosure of Interest: R. Cordtz: None declared, L. E. Kristensen: None declared, S. Overgaard Speakers bureau: Pfizer, AbbVie, Amgen, UCB, Celgene, BMS, MSD, Novartis, Eli Lilly, Janssen Pharmaceuticals, A. Odgaard: None declared, H. Lindegaard: None declared, L. Dreyer Consultant for: LD has received fees for speaking and consultancy by MSD, UCB and Janssen pharmaceuticals. **DOI:** 10.1136/annrheumdis-2017-eular.1742

THU0073 FACTORS ASSOCIATED WITH TREATMENT ADHERENCE IN RHEUMATOID ARTHRITIS: A SYSTEMATIC LITERATURE REVIEW

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Background: Nonadherence to treatment in rheumatoid arthritis (RA) has been shown to negatively impact on treat to target goals and disease outcomes. Identifying and targeting potential factors influencing nonadherence is therefore crucial in optimising patient management.

Objectives: To determine factors associated with nonadherence in patients with RA.

Methods: An electronic search was performed by two independent reviewers

using MEDLINE and focusing on articles published from inception to January 2017. The search strategy combined the thesaurus (MeSH) and expanded keyword searches of two concepts: RA and treatment adherence. Inclusion criteria included observational studies and clinical trials examining potential factors associated with nonadherence. Exclusion criteria included articles not in English or without online access and those with a focus on forms of therapy other than medication. Agreement between raters at the screening stage was high (97%, kappa=.87).

Results: The primary search yielded 1411 papers, from which 75 were eventually identified as suitable for full review (Figure). Of the 75 papers, 65 were based on observational studies and 10 on clinical trials. Factors associated with nonadherence were broadly categorized into patient-related factors (socio-demographic factors, patient perceptions [beliefs/knowledge/attitudes]), disease-related factors (disease duration/severity, comorbidities, functional disability) and treatment-related factors (drug type/ method of administration/duration/regimen complexity, combination therapy). The majority (70% of all included studies) of studies reported significant associations between patient-driven factors and nonadherence. Adherence was found to be negatively associated with socioeconomic status, health literacy, and beliefs/perceptions/knowledge of the disease and treatment. Studies reported poorer mental health state (n=6) and greater disability/pain (n=7) to be implicated in nonadherence. Disease duration was largely non-significant in treatment adherence, although a few studies reported a negative correlation (n=3). Combining biologics with DMARDs was associated with improved adherence. However, considering non-biologic DMARDs only, adherence rates were higher amongst monotherapy users. One study identified polypharmacy to be negatively associated with adherence. Drug side effects were associated with nonadherence (n=7).

Figure. Study selection process & outcomes.

Conclusions: Patient-related factors including personal perceptions were among key contributors to nonadherence to medication in RA patients. This highlights the need for addressing patient-driven perceptions, along with disease and treatment

Acknowledgements: Many thanks to Simon Coates and Julia Garthwaite of Library Services at University College London for their advice.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2017-eular.5137

Abstract THU0072 – Table 1. aSHRs and aHRs for risk of revision, PJI or death following THA/TKA in patients with RA compared with OA; and bDMARD treated RA patients compared with not-bDMARD treated, respectively

	RA (n=3913) vs OA (n=120 499)			bDMARD (n=360) vs no bDMARD (n=1586)		
	Revision aSHR (95% CI)	PJI aSHR (95% CI)	Death aSHR (95% CI)	Revision aSHR (95% CI)	PJI aSHR (95% CI)	Death aSHR (95% CI)
RA vs OA	0.71 (0.57–0.89) [†]	1.84 (1.55–2.18) [†]	1.58 (1.48–1.70) [†]	–	–	–
bDMARD treated [§]	–	–	–	0.99 (0.40–2.42)	0.94 (0.42–2.12)	0.97 (0.62–1.51)
Age at surgery	0.98 (0.98–0.98) [†]	1.00 (0.99–1.00)	1.09 (1.09–1.09) [†]	1.01 (0.98–1.03)	1.00 (0.97–1.02)	1.10 (1.08–1.12) [†]
Previous infection w/ hospitalization	1.48 (1.34–1.64) [†]	1.70 (1.53–1.90)	1.50 (1.45–1.56) [†]	0.94 (0.38–2.36)	1.56 (0.83–2.94)	2.14 (1.51–3.02) [†]
Chronic obstructive pulmonary disease	1.17 (0.99–1.37)	1.32 (1.11–1.56)	1.96 (1.86–2.06) [†]	2.26 (0.77–6.64)	1.19 (0.41–3.45)	1.08 (0.63–1.86)
Seropositive RA (seronegative as ref.)	–	–	–	1.33 (0.31–5.67)	4.54 (0.65–31.67)	1.92 (0.92–3.97)
csDMARD treated [§]	–	–	–	0.77 (0.33–1.81)	1.04 (0.53–2.02)	0.65 (0.44–0.96) [†]
Prednisolone treated [§]	–	–	–	1.72 (0.80–3.70)	1.18 (0.54–2.58)	1.88 (1.28–2.76) [†]

*Multivariate models were further adjusted for sex, calendar period (2000–02; 2003–05; 2006–08; 2009–11; 2012–14), DAS-28-CRP (remission, low; moderate or high DAS according to EULAR Remission Criteria), HAQ-DI and history of diabetes mellitus or ischaemic heart disease. [†]p<0.05. [§]Exposure defined as treatment in year prior and/or following surgery. Abbreviations: csDMARD, conventional synthetic DMARD; DAS28-CRP, Disease activity score using 28-joint count and C-reactive protein.