drugs². Clinicians could then cycle through more of these expensive drugs because of inefficacy. As a modifiable risk factor smoking should be targeted to improve outcomes for patients.

Objectives: To complete a pilot study examining for an association between smoking and drug inefficacy in rheumatoid arthritis. This baseline data was used in a quality improvement project aimed at reducing the prevalence of smoking in our rheumatology patients.

Methods: We identified patients using a dataset and a database including all patients currently receiving biologics in Musgrave park hospital. Each patient had a diagnosis of rheumatoid arthritis and was being treated with a biologic. We randomly selected 100 patients with rheumatoid arthritis, 50 of whom were current smokers and 50 non-smokers. We then performed a search on Northern Ireland's electronic care record for each patient and identified how many DMARDs and biologics were discontinued due to inefficacy. Inefficacy was defined as ongoing synovitis despite receiving the drug at adequate dosage for 3–6 months resulting in the drug being discontinued. We also identified patients who received rituximab and the number of patients for which it was stopped due to inefficacy.

Results: DMARDs and inefficacy: non-smokers had on average 0.98 stopped and smokers had on average 2.2 stopped. Biologics and inefficacy: non-smokers had on average 0.5 stopped and smokers had on average 0.82 stopped. Twenty smokers and twenty non-smokers were treated with rituximab. Non-smokers: 4 out of 20 had rituximab discontinued due to inefficacy. Smokers: 8 out of 20 had rituximab discontinued due to inefficacy.

Conclusions: In this small sample of patients, we found that smokers had greater DMARD and biologic inefficacy, particularly with rituximab where smokers had double the rate of inefficacy compared to non-smokers. Our quality improvement project aims to reduce the prevalence of smoking in our rheumatology patients which could result in better disease control, reduction in cardiovascular risk, and less drugs being cycled through. Aiming to achieve this, steps have been taken to set up a rheumatology smoking cessation clinic in our health trust.

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THU0200 SUBCUTANEOUS TOCILIZUMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS; A HIGH NUMBER OF PATIENTS ACHIEVE DOPPLER REMISSION AFTER 24 WEEKS

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Background: Clinical remission in rheumatoid arthritis (RA) is evaluated by Composite Disease Activity Scores (CDAS) including DAS28 and CDAI. Ultrasound (US) is more sensitive than clinical examination for detection of synovitis and assessed by use of Grey Scale (GS) and vascularisation by power/colour Doppler.

Objectives: To explore the number of patients reaching Doppler compared to CDAS remission in moderate to severe biologically naïve RA patients (pts) treated with subcutaneous tocilizumab (TCZ-SC) over 24 weeks and to evaluate the safety of TCZ-SC.

Methods: A regional multi-country (Denmark, Finland, Norway, Sweden) open-label, single-arm study (part of TOZURA¹), enrolled pts with inadequate response to csDMARDs. Pts received TCZ-SC 162 mg qw for 24 weeks as monotherapy or in combination with a csDMARD. Stable oral NSAIDs and corticosteroids (CS) (≤ 10 mg/day prednisone or equivalent), were allowed. Clinical (tender and swollen joints), laboratory tests, safety assessments as well as US examination (36 joints and 4 tendons, scored according to the Norwegian US atlas²) were performed at baseline, 4, 12 and 24 weeks. US reliability between centres was assessed prior to the study. There is no consensus on definitions of Doppler remission, and Doppler sum scores of 0 to 3 were presently explored as definitions of US remission. CDAS and EULAR/ACR Boolean remission were calculated.

Results: 133 pts were included, and 110 pts were followed with US assessments (83% female, mean (SD) age 55.6 (12.1) years and RA duration 8.7 (9.5) years, 81% anti-CCP positive and 62% with erosive disease). All clinical, laboratory and US variables decreased significantly, already after 4 weeks ($p < 0.001$) (table 1). Table 2 illustrates the high percentages of patients reaching remission, especially for DAS28(ESR) and Doppler. Fourteen serious AE were reported in 12 pts and 15 AEs led to permanent withdrawal of treatment.

	Baseline Median (IQR) n=110	4 weeks Median (IQR) n=102	12 weeks Median (IQR) n=95	24 weeks Median (IQR) n=91
DAS28(ESR)	5.0 (4.3–5.8)	3.1 (2.1–3.8)	2.1 (1.5–2.9)	1.6 (1.1–2.4)
CDAI	23.8 (17.1–31.2)	12.9 (7.3–21.9)	7.2 (3.6–11.4)	4.3 (1.8–9.8)
CRP	5.5 (2.6–13.1)	0.2 (0.2–0.4)	0.2 (0.2–0.6)	0.2 (0.2–0.4)
ESR	21 (12–34)	4 (2–7)	3 (2–5)	3 (2–5)
Patient's global VAS (0–100)	55 (36–70)	32 (18–49)	16 (7–31)	12 (4–28)
Assessor's global VAS (0–100)	35 (25–49)	17 (11–31)	10 (5–18)	5 (2–11)
Tender joint count	8 (5–12)	4 (1–9)	2 (0–5)	1 (0–3)
Swollen joint count	6 (2–10)	2 (0.5–6)	1 (0–2.5)	0 (0–2)
Sum score GS	21 (13–36)	16 (8–30)	12 (5–21)	9 (3–19)
Sum score PD	8 (2–20)	4 (1–10)	1 (0–4)	0 (0–2)
Remission criteria	Percentages of Pts in remission at 12 weeks		Percentages of Pts in remission at 24 weeks	
CDAI	19.2		34.7	
DAS28(ESR)	64.6		83.5	
Boolean	14.0		27.4	
PD sum score=0	42.6		53.3	
PD sum score $\leq 1 \leq 2 \leq 3$	60.6/68.1/73.4		65.6/75.6/78.9	

Conclusions: This open label study showed TCZ-SC to significantly reduce inflammation assessed by both CDAS and Doppler US. A high number of pts (53%–79%) obtained Doppler remission at 24 weeks using the different definitions. The safety profile was similar to what has previously been reported.

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THU0201 A POOLED ANALYSIS OF THREE TNF-A INHIBITOR BIOSIMILAR STUDIES IN PATIENTS WITH RHEUMATOID ARTHRITIS COMPARING RADIOGRAPHIC PROGRESSION BY DISEASE ACTIVITY STATES

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Background: SB4, SB2, and SB5 are biosimilars of the reference etanercept (ETN), infliximab (INF), and adalimumab (ADA), respectively. Radiographic progression using the modified Total Sharp Score (mTSS) at week 0 and final week (week 52 for etanercept and adalimumab and week 54 for infliximab) was measured in phase III randomised, double-blind studies comparing efficacy and safety of biosimilar to its reference product.

Objectives: Assess and compare radiographic progression by disease activity states at week 24 (for etanercept and adalimumab) or week 30 (for infliximab) in terms of DAS28 from a pooled analysis of three biosimilar studies.^{1–3}

Methods: Patients with radiographic data from each phase III study were pooled and grouped based on their disease activity state (remission, low disease activity [LDA], moderate disease activity [MDA], and high disease activity [HDA]) at week 24 or 30 in terms of DAS28. The mean change in mTSS and the proportion of radiographic non-progressors of higher disease activity groups (LDA, MDA, and HDA) in reference to remission were summarised descriptively and odds ratios (OR) were compared using 95% confidence interval (CI) obtained from logistic model with baseline DAS28.