of the medication, and general attitude towards the new medication on a ten-point scale.

Patients willing to take generic medicines

Patients unhappy to take generic medicines

Abstract AB0471 – Figure 1

Results: 45.2% of our cohort have received biological DMARDs. Although only 5.6% have some knowledge of biosimilars, 75.4% would accept biosimilars if their rheumatologist recommends it, with only 5.6% refusing to switch. 19% of patients were unsure. Of those refusing biosimilars, the main concerns related to efficacy and general concerns about change. In our RA cohort, 61.9% took generic medicines regularly and 84.6% of these they would also be comfortable taking biosimilars. In those refusing generic medicines (27%), 61.8% would be still comfortable taking biosimilars. 15.9% and 12.7% of patients had great concerns about the efficacy and safety profile of biosimilars, respectively. 26.2% were significantly worried that their physician may be unaware if they were receiving the biosimilar or reference product.

Conclusions: Despite being unfamiliar with biosimilars, most patients in our cohort would be comfortable taking biosimilars if recommended by their rheumatologist, highlighting the role of trust in doctor-patient relationships. Of patients usually refusing generic medicines, nearly two-thirds would still accept biosimilars. Almost a quarter of the patients were unsure about the use of biosimilars and many patients indicated that they would like more information regarding these products. This patient group offered the opportunities to improve the uptake rate of biosimilars by allaying their concerns through information-education strategies. The current legislation in Australia allows pharmacists to substitute biological DMARDs in consultation with the patient without informing the prescriber. This concerns nearly all (89%) prescribers in Australia. The majority of patients in our study were not concerned, whilst approximately one quarter were worried about unrecognised switching. A successful introduction of biological DMARDs is likely to improve patient access to effective biological therapy and to ensure sustainability of the healthcare budgets.

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AB0472

PHARMACODYNAMIC EFFECT AND SAFETY OF SINGLE-DOSE SARILUMAB SC OR TOCILIZUMAB IV OR SC IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA)

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Background: Two studies (PDY14191 [NCT02404558]: randomised, open-label, Japanese patients; 6R88-RA-1309 [NCT02097524]: randomised, open-label, non-Japanese patients) assessed the pharmacodynamic profiles of two monoclonal antibody blockers of IL-6Rα, sarilumab and tocilizumab.

Objectives: To evaluate the pharmacodynamics of absolute neutrophil count (ANC), C-reactive protein (CRP), IL-6, soluble IL-6R (sIL-6R), and safety after a single dose of subcutaneous (SC) sarilumab, or intravenous (IV) or SC tocilizumab in patients with RA.

Methods: 30 Japanese patients (PDY14191) were randomised 1:1 and received a single injection with SC sarilumab 150 mg or SC tocilizumab 162 mg without background medication. 101 non-Japanese patients (6R88-RA-1309) were randomised 1:1:1:1 and received a single dose of SC sarilumab (150 or 200 mg) +methotrexate (MTX), or IV tocilizumab (4 or 8 mg/kg)+MTX. Pharmacodynamic and safety outcomes were assessed through Week 6.

Results: Baseline demographics were comparable between studies except for higher mean body weight in non-Japanese patients (mean 83 vs 57 kg). Although there were numeric differences in baseline pharmacodynamic parameters in the two studies, onset of effects on ANC, CRP, IL-6, and sIL-6R during the first week after a single drug dose were similar regardless of drug, dose, or route of administration in both studies. Within both studies, maximal effects on ANC and CRP nadir and on IL-6 and total sIL-6R peaks were comparable for sarilumab and tocilizumab (table 1). The pharmacodynamic response was more prolonged with IV tocilizumab. Time for pharmacodynamic effects to return to baseline was consistent with the dosing intervals for SC sarilumab (q2w), and IV (q4w) and SC (q2w) tocilizumab. The safety profiles of sarilumab and tocilizumab were generally similar and both drugs were associated with laboratory effects consistent with their mechanism of action (ie, decrease in neutrophil count). There was a dose-dependent effect on ANC<1.0 Giga/L in study 6R88-RA-1309 and numeric differences in ANC<1.0 Giga/L between sarilumab and tocilizumab in PDY14191. The decrease in ANC was not associated with increased risk of infections.

Abstract AB0472 – Table 1. Baseline and change in pharmacodynamic parameters, and safety in studies 6R88-RA-1309 and PDY14191

	6R88-RA-1309 (non-Japanese patients)*				PDY14191 (Japanese patients)	
	SC Sarilumab 150 mg + MTX (N=26)	SC Sarilumab 200 mg + MTX (N=26)	IV Tocilizumab 4 mg/kg + MTX (N=25)	IV Tocilizumab 8 mg/kg + MTX (N=24)	SC Sarilumab 150 mg (N=15)	SC Tocilizumab 162 mg (N=15)
Neutrophils						
Baseline, mean±SD, Giga/L	4.32±1.53	4.72±1.96	4.04±1.36	4.52±2.48	3.45±1.11	3.81±0.99
Nadir, mean±SD (min-max), Giga/L	1.55±0.56 (0.61–3.07)	1.76±1.04 (0.21–3.97)	1.78±0.60 (0.96–2.92)	1.64±0.89 (0.69–4.51)	1.11±0.51 (0.3–1.9)	1.78±0.56 (0.9–2.9)
Time to nadir, median, days	3.5	4.0	5.0	3.0	2.0	4.0
CRP						
Baseline, median, mg/L	5.50	6.05	4.28	5.87	0.85	0.49
Nadir, median* (min-max), mg/L	0.67 (0.10–8.82)	0.49 (0.10–5.13)	0.43 (0.10–1.73)	0.31 (0.10–1.35)	0.06 (0.0–0.2)	0.15 (0.0–0.6)
Time to nadir, median, days	7.0	7.0	15.0	15.0	10.0	10.0
IL-6						
Baseline, mean±SD, pg/mL	71.9±58.4	9.86±10.5	7.33±11.1	22.1±45.4	1.97±5.42	5.75±15.5
Peak, mean±SD (min-max), pg/L	159±356 (22–1844)	177±234 (17–1079)	143±160 (23–644)	183±246 (25–1095)	44.0±42.2 (11–169)	48.4±67.7 (7–231)
Time to peak, median, days	5.0	4.5	6.0	6.5	5.0	7.0
sIL-6R						
Baseline, mean±SD, ng/mL	42.9±11.9	42.9±13.7	43.3±14.4	43.8±15.7	36.0±7.9	36.6±11.6
Peak, mean±SD (min-max), ng/mL	274±72.7 (125–406)	334±72.5 (159–442)	415±109 (230–603)	481±120 (340–704)	265±54.6 (155–344)	291±83.6 (206–469)
Time to peak, median, days	11.0	13.0	19.0	22.0	14.0	14.0
AEs						
Patients with TEAEs, N (%)	10 (38.5)	12 (46.2)	8 (32.0)	12 (50.0)	7 (46.7)	4 (26.7)
SAE, N (%)	0	0	0	1 (4.2)	1 (6.7)	0
Patients with ANC <1.0 Giga/L, N (%)	4 (15.4)	7 (26.9)	3 (12.0)	6 (25.0)	5 (33.3)	1 (6.7)
ANC grade						
ANC maximum grade: Grade 3 ≥0.5 to <1.0 Giga/L, N (%)	4 (15.4)	6 (23.1)	3 (12.0)	6 (25.0)	2 (13.3)	1 (6.7)
ANC maximum grade: Grade 4 ≥0.5 Giga/L, N (%)	0	1 (3.8)	0	0	3 (20.0)	0

*83.2% of patients were white. *Concentrations for CRP were not normally distributed, thus concentrations were summarized by median.

Conclusions: The pharmacodynamic and safety profiles observed after a single-dose of sarilumab SC or IV/SC tocilizumab are consistent with results anticipated in patients with RA administered an IL-6R inhibitor.

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AB0473

IMMUNOGENICITY OF BIOSIMILARS FOR RHEUMATIC DISEASES: AN UPDATED REVIEW FROM REGULATORY DOCUMENTS AND CONFIRMATORY CLINICAL TRIALS

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Background: Several biosimilars have been approved for the treatment of rheumatic diseases by the European Medicines Agency (EMA) or the US Food and Drug Administration (FDA).

Objectives: To summarise immunogenicity data from regulatory documents or confirmatory trials of biosimilars approved by the EMA or FDA for the treatment of rheumatic diseases.

Methods: EMA Public Assessment Reports (EPARs), FDA Clinical Summaries, PubMed records, and EULAR and ACR abstracts were searched for immunogenicity data from confirmatory trials of approved TNF α or CD20 inhibitor biosimilars in patients with rheumatic diseases. Data collected included the proportion (%) of patients positive for anti-drug antibodies (ADABs) among all patients and the proportion (%) of patients with neutralising antibodies (nABs) among ADAB-positive patients.

Results: We identified 10 biosimilars approved by the EMA or FDA: three each for adalimumab (BI 695501, SB5, and ABP 501) and infliximab (SB2, CT-P13, and infliximab-qbtz) and two each for etanercept (GP2015 and SB4) and rituximab (CT-P10 and GP2013). The duration of treatment periods in the 16 identified trials (which varied in design and methodology of ADAB/nAb detection) ranged from 12 weeks to 102 weeks. Across treatment groups in all trials, 0% to 62% of patients were ADAB-positive, of whom 0% to 100% were also nAb-positive. The lowest proportions of ADAB-positive (0%–13%) and nAb-positive patients (0%–3%) were observed in the trials of etanercept and its biosimilars, and the highest in the trials of infliximab and its biosimilars (ADABs: 20%–62%; nABs: 88%–100%). Consistent with the biosimilar designation, the proportions of ADAB- and nAb-positive patients in individual trials were similar between the originator and biosimilar products. Of note, in a 52 week trial of etanercept and its biosimilar SB4, the incidence of ADABs by Week 52 was significantly lower with SB4 than with etanercept (1% [3/299] vs 13% [39/296], $p < 0.001$). However, as noted in the SB4 EPAR, this difference, which was not reflected in the incidence of nABs and efficacy or safety of etanercept, may have been due to an ADAB assay bias in samples collected at Weeks 4 and 8, when 37/39 ADABs in the etanercept group and 2/3 in the SB4 group were detected.

Conclusions: Immunogenicity of the approved biosimilars is generally similar to that of originator products. For ETN, which has been associated with relatively low

ADAB levels, there was a discrepancy in ADAB incidence compared with its biosimilar SB4, but those differences were transient and did not affect clinical activity or safety.

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AB0474

THE CLINICAL EFFECTIVENESS AND COST SAVINGS OF TAPERING BIOLOGIC DMARDs IN PATIENTS WITH INFLAMMATORY ARTHRITIS AT A UK DISTRICT GENERAL HOSPITAL

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Background: Biologic DMARDs (bDMARDs) have led to substantial improvement in clinical outcomes for treatment of rheumatoid arthritis (RA), psoriatic arthritis (PsA) and axial/peripheral spondyloarthritis (SpA), making remission a realistic target. Current guidelines suggest clinicians should consider tapering after achieving remission in RA.¹ Nevertheless, the optimal approach for tapering bDMARDs remains unknown and un-standardised across conditions.²

Objectives: To evaluate the tapering strategies on 3 major rheumatological disease entities (RA, PsA, SpA), the number of patients successfully tapered and the total cost saving from successful tapering.

Methods: The study was conducted at North Devon District Hospital in Barnstaple, UK and includes all bDMARDs users up until 31st December 2017. The tapering strategy was identified from hospital notes. Patients who are deceased, lost to follow-up or discontinued bDMARDs due to contraindication or adverse effects were excluded. Successful tapering is defined as patient on tapered dose or had their biologics withdrawn and remains at target treatment level (RA: DAS-28 <2.6; PsA: <3 tender joints and <3 swollen joints; SpA: BASDAI <4).

Results: There are a total of 298 patients: 174 RA; 59 PsA; 57 SpA; 8 other diagnoses. 94 patients (31.5%) had attempted tapering: 52 RA, 18 PsA, 22 SpA. 60 (20.1%) successfully tapered their bDMARDs: 34 RA (56.7%); 13 PsA (21.7%); 13 SpA (21.7%). Out of 34 RA, 30 seropositive; 4 seronegative; 24 co-prescribed with synthetic DMARDs, 10 on monotherapy. Out of 13 PsA, 8 co-prescribed with synthetic DMARDs; 5 on monotherapy.

59 tapered by increasing interval of subcutaneous treatment. Only 1 RA patient tapered its IV dose of tocilizumab. This patient is excluded from the final analysis. Tapering of subcut bDMARDs therapy by disease and price (table 1). Number rounded to 2 decimal points.

Abstract AB0474 – Table 1

Disease	bDMARDs	No. of patients	Usual dose of interval (days)	Mean tapered dose interval (days)	Mean period of tapering (months)	% saving per unit biologic	Cost per unit biologic (£)	Cost Saving per patient (£)	Total cost saving (£)
RA	ADA	12	14	7.00	27.75	50.00	352.14	9771.89	117262.68
	CZP	13	14	6.85	22.92	48.92	357.50	8016.92	10421.96
	ETN	5	7	8.20	34.40	117.14	134.06	21608.41	108042.05
	TOC	3	14	3.00	14.75	42.86	179.20	4531.50	13594.50
Total		33							249321.19
PsA	ADA	7	14	3.14	14.86	22.43	352.14	2347.43	16432.01
	GOL	4	28	10.50	18.25	28.57	701.93	4803.83	19215.32
	ETN	2	7	2.00	11.50	28.57	134.06	1761.84	3523.68
Total		13							39171.01
SpA	ADA	9	14	4.89	20.30	34.93	352.14	4993.90	44945.10
	GOL	2	28	10.50	5.63	37.50	701.93	7121.81	14243.62
	CZP	1	14	10.00	10.00	71.43	357.50	5107.25	5107.25
	ETN	1	7	3.00	31.00	42.86	134.06	7124.81	7124.81
Total		13							71420.78
Grand Total		59							359912.98

ADA – adalimumab; TOC – tocilizumab; ETN – etanercept; GOL – golimumab; CZP – certolizumab pegol

Conclusions: In our study, 20% of bDMARDs users successfully tapered their dose. The total cost saving is significant at £359,912.98 over the tapered period, of which £249,321.19 (69%) in RA; £39,171.01 (11%) in PsA; £71,420.78 (20%) in SpA.