Methods: 50 consecutive Spanish patients undergoing periodic treatment with TCZ who fulfilled the 2010 classification criteria for RA [5] were recruited. Adiponectin serum levels were assessed in samples obtained immediately prior to (pre-infusion) and 60 minutes after the end of a TCZ intravenous infusion (post-infusion) by a commercial Enzyme-Linked Immunosorbent Assay (ELISA) kit.

Results: Similar serum levels of adiponectin were found following the TCZ infusion (mean $\pm$ standard deviation: $23.01 \pm 18.58 \mu\text{g/mL}$ versus $22.35 \pm 17.84 \mu\text{g/mL}$, pre- and post-infusion, respectively, $p=0.69$). Additionally, there was a negative correlation between adiponectin basal levels and body mass index ($r=-0.45$, $p<0.01$), insulin ($r=-0.33$, $p=0.02$), insulin/glucose index ($r=-0.32$, $p=0.03$) and C-peptide levels ($r=-0.32$, $p=0.03$) of RA patients, whereas a strong positive correlation was observed with HDL-cholesterol levels ($r=0.51$, $p<0.01$). Moreover, basal levels of adiponectin were significantly lower in obese patients when compared to those with normal weight ($p=0.03$).

Conclusion: Our study suggests that anti-IL-6 therapy has no short-term effect on adiponectin serum levels in patients with RA. Furthermore, our results support that low adiponectin levels are associated with MetS features and, therefore, with CV disease in RA.

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POS0628

FAILURE TO SUSTAIN TREATMENT TARGET AFTER TAPERING TOCILIZUMAB IN PATIENTS WITH RHEUMATOID ARTHRITIS: 4-YEAR LONGITUDINAL DATA FROM A NATIONWIDE COHORT

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Background: Tapering biologic therapy after achieving clinical remission or low disease activity (LDA) has become a viable option in daily clinical practice of treating patients with rheumatoid arthritis (RA). There are yet few studies investigating its effectiveness and safety compared with those of standard biologic treatment, especially with non-tumor necrosis factor inhibitors.

Objectives: To investigate the effectiveness and safety of tapering tocilizumab (TCZ) in patients with RA who attained LDA after TCZ therapy.

Methods: Data were collected from a nationwide cohort of patients with RA receiving biologic therapy in South Korea (KOBIO-RA). This study included 350 patients who were treated with TCZ and achieved Clinical Disease Activity Index (CDAI)-LDA or remission (CDAI ≤ 10) after one year of treatment. We performed a longitudinal analysis utilizing clinical data measured in all 1-year intervals using generalized estimating equations (GEE). A total of 575 one-year intervals were divided into two groups according to the dose quotient (DQ, 0-100%) of TCZ within the interval (tapering group vs. standard treatment group). The main outcome of this study was loss of CDAI-LDA in the following 1-year interval.

Results: Tapering TCZ was conducted in 282 (49.0%) intervals with a mean (SD) DQ of 66.0 (15.5). Loss of CDAI-LDA occurred in 91 (15.1%) intervals. Multivariable GEE showed significantly increased loss of CDAI-LDA (adjusted OR (95% CI): 1.76 [1.01 to 3.07]) in the tapering group after adjusting for previous biologics use, route of TCZ administration, concomitant glucocorticoid use, and CDAI measured in the previous follow-up. In addition, the likelihood to achieve DAS28-deep remission (DAS28-ESR < 1.98) was also significantly lower in the tapering group (adjusted OR 0.68 [0.46 to 0.99]). In contrast, there was no significant difference in the proportion of fulfilling other remission criteria between the two groups (Table 1). Development any adverse drug event or event of special

interest was comparable in both groups except for hypercholesterolemia, which was lower in the tapering group.

Table 1. The effect of tapering tocilizumab on achieving outcomes

	Loss of CDAI-LDA	DAS28-remission	DAS28-deep remission	CDAI-remission	SDAI-remission	ACR/EULAR remission
Unadjusted OR (95% CI) (vs. standard-dose group)	1.02 (0.67 to 1.55)	1.03 (0.71 to 1.49)	0.76 (0.54 to 1.06)	1.23 (0.75 to 2.00)	0.92 (0.59 to 1.44)	0.98 (0.65 to 1.48)
Adjusted OR (95% CI) (vs. standard-dose group)	1.76 (1.01 to 3.07)	0.87 (0.54 to 1.38)	0.68 (0.46 to 0.99)	0.94 (0.57 to 1.55)	0.87 (0.54 to 1.38)	0.76 (0.50 to 1.18)

CDAI, clinical disease activity index; CI, confidence interval; DAS, disease activity score; LDA, low disease activity; OR, odds ratio; SDAI, simplified disease activity index.

Conclusion: Tapering TCZ after achieving LDA in patients with RA increases the risk of losing the benefit of LDA without a significant merit in safety.

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POS0629

PREDICTORS OF CHANGE IN DISEASE ACTIVITY IN RHEUMATOID ARTHRITIS AFTER START OF TREATMENT WITH ABATACEPT

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Background: Abatacept is a biologic disease-modifying anti-rheumatic drug (bDMARD) used to treat rheumatoid arthritis (RA) since 2006, acting by inhibition of T-cell co-stimulation. There are limited data on factors predicting clinical outcomes in RA after start of treatment with abatacept.

Objectives: The primary aim was to identify predictors of change in disease activity in RA-patients after start of treatment with abatacept.

Methods: This cohort study was based on data from the Swedish Rheumatology Quality register (SRQ). All patients with RA who started treatment with abatacept between 2006 and 2017 were included. Clinical data from the SRQ included demographics, disease characteristics and antirheumatic treatment. Disease activity was measured according to DAS28-ESR (Disease Activity Score of 28 joints based on erythrocyte sedimentation rate) at inclusion and at follow-up visits at 6 and 12 months from start of treatment with abatacept. Baseline predictors of change in disease activity were investigated using linear regression models bivariate and adjusted for baseline values of DAS28. Covariates with a p-value of <0.1 were retained for the final multivariate model. In case of covariates with major collinearity, the one with the stronger association with change of DAS28 was selected.

Results: In a total of 2716 patients, 872 had data on change in DAS28 at 12 months. Among these, most patients were women (79.6%) and the mean age at start of abatacept was 58.4 years (SD 13.6). The majority of patients had established RA, with a mean disease duration of 13.5 years (SD 11.1). Most patients had severe, active disease, with substantial pain and disability, despite extensive treatment. The mean number of bDMARDs that a patient had been exposed to was 1.90 (SD 1.32). DAS28 decreased significantly over the first year (mean 1.22: 95% CI 1.12, 1.32). The greatest decrease in DAS28 (mean 1.09) occurred during the first 6 months from start of abatacept. The multivariate regression model identified male sex and limited previous bDMARD exposure as independent predictors of change in DAS28 at 12 months from start of abatacept – adjusted for baseline DAS28, RA duration and current treatment with methotrexate or prednisolone (Table 1).

Conclusion: In this national register study, male sex and limited previous exposure to bDMARDs were independent predictors of reduction of disease activity one year after start of treatment with abatacept for RA, possibly reflecting a better prognosis overall in such patients.

Table 1. Baseline predictors of reduction of disease activity at 12 months from start of abatacept. Linear regression.

Variables	Bivariate			Adjusted for baseline DAS28			Multivariate		
	B	95% CI	P-value	B	95% CI	P-value	B	95% CI	P-value
Male sex	0.39	[0.13, 0.64]	0.003	0.43	[0.20, 0.66]	<0.001	0.42	[0.19, 0.64]	<0.001
Age (per SD)	0.10	[-0.004, 0.21]	0.058	0.044	[-0.051, 0.14]	0.37	N/A		
RA duration (per SD)	-0.14	[-0.25, -0.037]	0.008	-0.11	[-0.21, -0.016]	0.022	-0.030	[-0.13, 0.065]	0.54
HAQ (per SD)	0.12	[0.007, 0.23]	0.037	-0.24	[-0.35, -0.13]	<0.001	N/A		
VAS pain (per SD)	0.26	[0.15, 0.37]	<0.001	-0.058	[-0.17, 0.054]	0.31			
MTX ¹	0.20	[-0.013, 0.41]	0.066	0.17	[-0.018, 0.36]	0.076	0.11	[-0.076, 0.29]	0.25
Prednisolone ¹	-0.19	[-0.41, 0.017]	0.072	-0.17	[-0.36, 0.024]	0.087	-0.14	[-0.33, 0.043]	0.13
bDMARDs ² (per SD)	-0.30	[-0.40, -0.20]	<0.001	-0.32	[-0.41, -0.23]	<0.001	-0.31	[-0.40, -0.21]	<0.001

B=beta coefficient; N/A=not applicable; SD=standard deviation; CI=confidence interval. Bold text indicates significant associations. DAS28, Disease activity Score of 28 joints; RA, rheumatoid arthritis; HAQ, Health Assessment Questionnaire; VAS, visual analogue scale; MTX, methotrexate; bDMARD, biologic disease-modifying antirheumatic drug. ¹Current treatment ²Number of previous bDMARDs

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POS0630 COMPARISON OF THE EFFICACY AND SAFETY OF ORIGINAL AND BIOSIMILAR ADALIMUMAB MOLECULES IN CHILDHOOD RHEUMATIC DISEASES

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Background: The TNF- α inhibitor adalimumab is a biological disease modifying anti-rheumatic drug (bDMARD) that has been used in different rheumatic diseases with a resistant course. ABP-501 is a biosimilar product (BP) of adalimumab, recently approved by the FDA and EMA. To our knowledge, there is no study assess the efficacy and safety of these two molecules on pediatric patients.

Objectives: We aimed to compare the efficacy and safety of the original and biosimilar adalimumab (ABP-501) molecules in childhood rheumatic diseases.

Methods: This non-interventional, retrospective, single-centre analysis carried out in Umraniye Training and Research Hospital, Pediatric Rheumatology Clinic, Istanbul, Turkey. The study group consisted of patients who were followed due to chronic rheumatic disease between January 1, 2016 and June 1, 2020, and received reference or biosimilar adalimumab therapy for at least three months. Demographic and clinical data of patients were collected at baseline, 3rd, 6th, and 12th months of treatment. Disease activity assessment was made with JADAS-27 in JIA patients, with SUN criteria in uveitis patients, and with Behçet's Disease Activity Index in BD patients. Efficacy and safety of treatments were compared between reference and biosimilar adalimumab groups.

Results: A total of 89 patients (65 with original and 24 with biosimilar molecule) treated with adalimumab, were included in the study. There were 45 female and 44 male in the study, and the median age at the initiation of the adalimumab was 166 months (min-max: 36-231). Of the 89 patients evaluated, the primary diagnoses of 62 were juvenile idiopathic arthritis, 13 were idiopathic uveitis, eight were Behçet's disease, three were Blau syndrome, two were chronic recurrent multifocal osteomyelitis and one was Vogt-Koyanagi-Harada syndrome. 63 of the patients were biologic-naïve, and 13 were switched from etanercept, 11 from infliximab, and two from other bDMARDs. The median exposure time of adalimumab was 16 months (min-max: 3-70) in RP and 14.5 months (min-max: 3-23) in BP. All patients had active disease before treatment. In the group treated with RP, inactive disease was achieved in 60%, 76.6% and 87.2% of the patients at the 3rd, 6th and 12th months, respectively. Also, inactive disease was achieved in 62.5%, 78.2% and 78.2% of the patients at the 3rd, 6th and 12th months in the group treated with BP, respectively. There was no statistically significant difference in efficacy between the groups at the 3rd, 6th and 12th months (p=0.83, 0.07 and 0.32). Serious adverse events were seen in one patient in each groups (lymphoma in RP group, tuberculous meningitis in BP group). Non-serious adverse events were observed in eight patients (12.3%) in the RP group and in two patients (8.3%) in the BP group, without statistically significant difference between groups (p=0.86).

Conclusion: No significant difference was observed between the biosimilar adalimumab ABP-501 and RP adalimumab in terms of efficacy and safety.

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POS0631 COMPARATIVE EFFICACY OF COMBINATION THERAPY WITH BIOLOGIC OR TARGET SYNTHETIC DRUGS FOR RHEUMATOID ARTHRITIS: A BAYESIAN NETWORK META-ANALYSIS

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Background: Biologic agents and small molecules have shown long term benefit when added in patients with active RA non-responders to conventional DMARDs treatment (1). In head-to-head trials only adalimumab was compared to other drugs in combination with methotrexate, with some evidence of superiority but no data on multiple comparisons have been reported (2). The availability of biosimilar agents led in clinical practice to prefer mainly the cheaper one, so the choice of the most effective treatment remains a clinical unmet need (3).

Objectives: To assess the relative efficacy of different therapeutic strategies for achieving ACR50 response at 24 weeks of treatment in patients with active RA, based on direct and indirect evidence.

Methods: We performed systematic reviews of MEDLINE, EMBASE, and Cochrane Library databases, searching for all published phase 3 Randomised Controlled Trials (RCTs) comparing adalimumab originator to its biosimilars, abatacept, baricitinib, certolizumab pegol, tofacitinib or upadacitinib, combined to MTX, in patients with active RA inadequate responders to previous conventional DMARDs. American College of Rheumatology (ACR) 50% response at 24 weeks of treatment had to be evaluated both in adalimumab branch and in examined drug branch. Bayesian fixed-effect network meta-analysis was performed to combine the direct and indirect evidence using the WinBUGS 1.4 software (MRC Biostatistics Unit, Cambridge, UK).

Results: Eleven RCTs evaluating 6'004 patients were included in the analysis, namely originator (1) and biosimilars (2) adalimumab, abatacept (3), baricitinib (4), certolizumab pegol (5), tofacitinib (6) and upadacitinib (7). Convergence was reached at n.100'000 iterations. Upadacitinib seems to be more effective than both originator and biosimilar adalimumab in achieving ACR 50 (OR 1.65 95% CI 1.25-2.14 and OR 1.22 95%CI 1.10-2.18; see Figure 1). Similarly, tofacitinib was more effective of originator adalimumab (OR 1.25 95%CI 1.01-155). Upadacitinib was ranked first among treatments with a probability of being the agent more likely to induce ACR 50 response of 86.3%. In this regard tofacitinib had a probability of 4.8%, hence it was ranked second among treatments.

Figure 1. Caterpillar plot OR for ACR50 at 24 weeks (originator [1] and biosimilars [2] adalimumab; abatacept [3]; baricitinib [4]; certolizumab pegol [5]; tofacitinib [6]; upadacitinib [7]).