the dose of bDMARD.^{1,2} However, there are limited data indicating which factors, if any, are prognostic of flares after tapering. Moreover, association between underlying inflammation and disease flare following tapering remains unclear.

Objectives: Investigate association between residual disease activity at double-blind (db) bi detected by MRI and occurrence of flares in SCR RA pts randomized to an adalimumab (ADA) dose tapering regimen controlled by ADA withdrawal (w/d).

Methods: Pts in SCR (DAS28[ESR or CRP] <2.6) for at least 6 mos and at screening (DAS28[ESR] <2.6) on ADA 40 mg eow were enrolled in this phase 4, randomized, db, parallel group study. Following 4-wk of open-label lead-in (OL-LI) during which SCR was confirmed, pts were randomized 5:1 to taper (ADA 40 mg q3w) and w/d arms for 36 wks. Pts experiencing flare (defined as either DAS28[ESR] >2.6 and DAS28[ESR] increase >0.6 from bi or DAS28[ESR] increase ≥1.2 from bi, irrespective of absolute DAS28[ESR]) received rescue OL ADA 40 mg eow for up to 16 wks. The primary endpoint was the association between bi hand and wrist synovitis and bone marrow edema (BME) RAMRIS scores and their composite with flare occurrence. Secondary endpoints were association between pt and disease characteristics and occurrence of flare, time to and occurrence/severity of flares, maintenance of remission, and time to and regain of clinical remission following flare. Logistic regression, descriptive statistics (counts and proportions with 95% CI) and Kaplan-Meier estimates are provided. Last observation carried forward was used for missing data. Treatment-emergent adverse events were monitored.

Results: Of 146 pts who entered the OL-LI period, 122 were in SCR at wks 0 and 4 and were randomized to taper (n=102) or w/d (n=20) arm. Pts were female (75%) with ~13 yrs of active disease, received ADA for >5 yrs (~2 yrs in SCR). Bi disease activity measures were low (DAS28[ESR]: 1.7; composite synovitis and BME RAMRIS score: 4.0), and >85% pts were in CDAI and/or SDAI remission. In the taper and w/d arms, 37 (36%) and 9 (45%) pts experienced flare, respectively. Time to flare was 18.0/13.3 wks (Q1 for taper/withdrawal arm). At wks 12/24/36, flare rates were 13.1/27.4/34.9% in the taper arm and 10.0/35.0/40.0% in the w/d arm. Neither of the bi RAMRIS scores nor their composite was associated with flare occurrence in the taper arm (Table). Only bi HAQ-DI was associated with flare occurrence. Through 16 wks of OL rescue with ADA 40 mg eow, 38% and 50% of pts in the taper and w/d arms, respectively, regained clinical remission; approximately 85% in both arms were in clinical remission by DAS28(ESR) <2.6 at week 40. No new serious risks or safety signals were identified.

Conclusion: A relatively low flare rate was observed among this established RA population in longstanding SCR who tapered or withdrew ADA. Baseline HAQ-DI, but not MRI inflammation, was found to be associated with flare occurrence, which may be reflective of the very low bi MRI inflammation scores in this sustained remission cohort.

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	Odds Ratio (95% CI)	P-value
Baseline synovitis RAMRIS score (n = 102)	0.99 (0.82, 1.20)	0.94
Baseline BME RAMRIS score (n = 102)	0.96 (0.82, 1.12)	0.59
Baseline composite synovitis and BME RAMRIS score (n = 102)	0.98 (0.89, 1.08)	0.69
Smoking status (current vs non-current) (n=101)	2.00 (0.74, 5.39)	0.17
Baseline co-morbidities (yes vs no) (n=102)	3.96 (0.84, 18.79)	0.08
Baseline anti-citrullinated peptide antibody status (positive vs negative) (n=101)	1.06 (0.42, 2.71)	0.90
Baseline rheumatoid factor status (positive vs negative) (n=101)	1.14 (0.50, 2.58)	0.75
Baseline disease duration (years) (n = 102)	1.04 (1.00, 1.08)	0.06
Previous treatment with bdmards(excluding adalimumab) (yes vs no) (n=102)	1.41 (0.57, 3.51)	0.46
Previous treatment with csdmards and bdmards(excluding adalimumab) (yes vs no) (n=102)	1.54 (0.61, 3.87)	0.36
Baseline duration of adalimumab therapy (years) (n = 102)	1.07 (0.95, 1.21)	0.26
Baseline remission duration (years) (n=85)	1.07 (0.87, 1.32)	0.51
Baseline DAS28(ESR) (n = 102)	0.60 (0.29, 1.21)	0.15
Baseline CRP (mg/l) (n = 102)	1.01 (0.99, 1.03)	0.40
Baseline HAQ-DI (n = 102)	1.34 (1.01, 1.77)	0.04*

bDMARDs: biological disease modifying anti-rheumatic drugs; csDMARDs: conventional synthetic disease modifying anti-rheumatic drugs; DAS28(ESR): 28-joint disease activity score based on erythrocyte sedimentation rate; CRP: C-reactive protein; HAQ-DI: health assessment questionnaire disability index; RAMRIS: RA-MRI scoring; BME: bone marrow edema; *Statistically significant at 0.05 levels

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SAT0129 DISEASE FLARES DURING PREGNANCY IN RHEUMATOID ARTHRITIS: WHAT IS THE IMPACT OF STOPPING bDMARDS AT THE BEGINNING OF PREGNANCY?

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Background: During pregnancy, patients with rheumatoid arthritis (RA) can experience flares, which might influence pregnancy outcomes.

Objectives: To assess disease course during pregnancy and identify possible risk factors of disease flares in RA.

Methods: Data on RA patients prospectively followed in a pregnancy clinic were retrospectively analyzed before conception and during each trimester. Clinical characteristics, disease activity (DAS28-CRP3), medication use, and pregnancy outcomes were analyzed. Flare was defined by an increase of DAS28-CRP3 greater than 0.6.

Results: Among 85 RA-pregnancies (mean age 34, SD 4.8; median disease duration 97 months, IQR 31-156) in 66 patients enrolled between 2010 and 2018, 8 pregnancies ended with early miscarriages, 1 with intrauterine fetal death and 2 were voluntary interrupted (1 for MTX exposure and 1 for encephalocoele). The remaining seventy-four pregnancies in 62 patients were analyzed. Before conception, 52(71%) were in remission, 13(18%) in low disease activity and 8(11%) with moderate disease activity. Flares occurred in 29/74 (39%) patients during pregnancy (14/1° trimester, 18/2° trimester, 9/3° trimester). Flares occurred more frequently in patients with a previous use of more than one conventional DMARDs (cDMARDs) (p 0.28) and a higher disease activity before conception (0.025) and in the 1°trimester (p 0.08). At conception, 30 (41%) patients were on biological DMARDs (bDMARDs) (16 ETA, 8 CTZ, 3 GOL, 2 ADA) and 16% with an active disease. 29 discontinued the treatment at positive pregnancy test and 8(27%) reintroduced bDMARDs because a flare during 1° (1 CTZ, 1 ETA), 2°(1 ADA, 2CTZ, 2 ETA) and 3° trimester (1 ETA) (Figure 1). 20/30(66%) experienced at least one flare during pregnancy. Forty-four (59%) patients were bDMARDs naive at conception (47% CCS, 41% HCQ, 16% SSZ, 2.3% MTX, 4.5% CyA), 6(7%) with an active disease. 16/44(36%) patients experienced at least one flare during pregnancy, 3 more than one flare (Figure 1). Seventeen live births were accompanied by complications (7 preterm deliveries, 2 very preterm deliveries, 6 premature rupture of membranes and 2 newborns small for gestational age). 60% of preterm births occurred in patients with a flare during pregnancy.

Conclusion: In a cohort of prospectively followed RA-pregnancies 39% of patients experienced at least one flare during pregnancy. A higher frequency was observed in patients on bDMARDs at conception after stopping the drug at positive pregnancy test. This suggests that patients with a more aggressive disease, as those on bDMARDs, require continuing treatment beyond conception. Counselling of patients on preconception treat-to-target management may help to achieve lower disease activity, especially in patients with a more severe disease (active disease or previous use of more than one cDMARDs). This may result in better pregnancy outcomes.

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SAT0130

ANTI-CITRULLINATED PEPTIDE ANTI-BODIES TITERS DECREASE AFTER RITUXIMAB BUT NOT AFTER ABATACEPT OR TNF BLOCKERS TREATMENT: A REAL-LIFE ANALYSIS

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Background: There is an increasing body of evidence suggesting a direct pathophysiological role of ACPA in Rheumatoid Arthritis (RA). Therefore, on the top of clinical, biological and imaging remission, one target could be immunological remission, defined as the normalization of the ACPA titers after therapy. In this sense, data related to the capacity of different biologics to normalize ACPA are contradictory.

Objectives: To evaluate the changes in ACPA titers before and after treatment with different biologics.

Methods: RA patients treated with biologics were identified via the hospital's pharmacy and/or the Electronic Medical Record of the patients; thereafter, for each patient, ACPA titers before/after treatment were retrieved from the department of biology. To be included, patients had to be diagnosed with RA, to have received a biologic (either abatacept IV or SC, TNF-inhibitors (TNFi) (Infliximab iv and Etanercept SC), or Rituximab IV) and to have at least two dosages of ACPA (at least one before and one after biologic treatment). ACPA titers were compared before and after treatment in each of the treatment groups. A mixed model analysis including an interaction between the drug and time was also performed.

Results: Among the 328 selected RA patients 92 patients (female: 84%, mean age: 62 years) had enough biological data to be included for the analysis: 36 patients had received rituximab, 21 abatacept, 35 TNFi. Mean (Standard deviation) ACPA levels in the whole group before treatment was 924.8 (1164.6) UI/L. ACPA titers (summarized in figure 1) decreased significantly after Rituximab (from 1287 (1322) to 301(387) UI/L; $p < 0.005$) but not after Abatacept (from 857(1166) to 1352(1241) UI/L) or TNF blockers (from 593(881) to 1116(1398) UI/L). Modelisation of ACPA titers over follow-up (mixed models) revealed a significant interaction between drug and time, suggesting a drug effect of such variation (Figure)

Figure 1. Changes in the ACPA titers after biologics treatment in RA where T0 = before biologic; T1 to T4 = timepoints after biologic

Conclusion: In this real-life study, ACPA titers decrease slightly only after Rituximab therapy. These data suggest that there is potentially a huge unmet need in RA if the target is to achieve an immunological remission. **Disclosure of Interests:** Stéphane Hilliquin: None declared, Loriane Gutermann: None declared, Claire Goulvestre: None declared, Jerome Avouac: None declared, maxime dougados Grant/research support from: Eli Lilly and Company, Pfizer, AbbVie, and UCB Pharma, Consultant for: Eli Lilly and Company, Pfizer, AbbVie, and UCB Pharma, Anna Moltó: None declared

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SAT0131

SAFETY AND EFFECTIVENESS OF DISEASE-MODIFYING ANTI-RHEUMATIC DRUGS (bDMARDs) IN OLDER ADULTS WITH RHEUMATOID ARTHRITIS: A RETROSPECTIVE COHORT STUDY

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Background: Rheumatoid arthritis is common among older adults and biological disease-modifying antirheumatic drugs (bDMARDs) are effective in treating this population. However, older patients reportedly experience more adverse events (AEs) with effectiveness being either equivalent or worse than younger patients.

Objectives: Our primary objective was to compare the AEs associated with the use of bDMARDs and their relative effectiveness in three age groups: Group 1 (75+), Group 2 (65-74 years) and Group 3 (55-64 years) patients. We explored if sex, disease activity, baseline functional impairment, and the type of bDMARDs used differed across the three age groups as a secondary objective.

Methods: A retrospective cohort study of adults 55+ with RA seen between Jan 1, 2007 and July 31, 2009 was performed utilizing the RAPPORT (Rheumatoid Arthritis Pharmacovigilance Program and Outcomes Research in Therapeutics) database housed in Edmonton, Alberta, Canada. Baseline characteristics (age, sex, DAS28 score, HAQ score, types of bDMARDs used), drug effectiveness (based on DAS28 score) and associated AEs were compared across the three age groups. Descriptive statistics (Mean, SD, percentages) were used. An intention to treat analysis with chi-square testing for categorical variables and t testing for continuous ones were used to test for the significance of differences found.

Results: A total of 333 patients met our entry criteria (69.4% female, 30.6% male) with 52, 125 and 156 from groups 1, 2 and 3 respectively. Group 1 patients had a significantly higher mean HAQ score (2.16) compared to the younger groups ($P < 0.05$), and a mean DAS28 (6.52) score significantly higher than the 55-64 group ($P < 0.05$). Group 1 patients were also more likely to experience AEs ($p < 0.05$), which were more likely to be infectious ($p < 0.05$), life threatening/severe ($p < 0.05$), cause discontinuation of treatment ($p < 0.05$) and multiple ($p < 0.05$) compared to the two younger groups. We also interestingly found the remission rate to be significantly higher in Group 1 patients compared to Group 2 ($p < 0.05$). Etanercept was the most commonly used drug among all age groups. Rituximab and abatacept were much less frequently used. Rate of AEs and therapy effectiveness did not differ significantly by sex across the three age groups.

Conclusion: Older adults aged 75+ treated with bDMARDs for RA are at a significantly higher risk of AEs, which should be included in the treatment discussion. The higher remission rate in those 75+ compared to those 65-74, which has not been reported previously, warrants further study.

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