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THU0101 TORQUE TENO VIRAL LOAD FOR MONITORING OF BIOLOGICAL THERAPIES IN RHEUMATOID ARTHRITIS

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Background: The apathogenic and highly prevalent Torque Teno Virus (TTV) is associated with the immunocompetence of its host and has been proposed for immunologic monitoring in solid organ transplantation.

Objectives: Herein we explore TTV levels in rheumatoid arthritis (RA) patients receiving biological disease-modifying anti-rheumatic drugs (bDMARDs) in the context of clinical response.

Methods: The BIOBIO study was designed to evaluate biomarkers for prediction of clinical response in patients with RA. Within this multicentre open-label trial, patients with insufficient response to MTX were randomized to TNFi (infliximab; INF), anti-IL-6 receptor (tocilizumab; TCZ), CTLA4-Ig (abatacept; ABA) or anti-CD20 (rituximab; RTX) in addition to MTX. TTV in peripheral blood samples was quantified at baseline and 3 months by RT-PCR.

Results: TTV was measured in 95 RA patients [INF (n=23), TCZ (n=22), ABA (n=27) or RTX (n=23)]. Median TTV levels at baseline were 4.2×10^4 c/ml with no difference between the treatment groups. After 3 months of treatment patients with INF (p=0.018), ABA (p=0.071) and RTX (p<0.001) showed an increase in TTV levels compared to baseline. There was no change in TTV in patients with TCZ, who were omitted from further analyses. TTV at 3 months after treatment was higher in patients achieving a SDAI85 response at month 6 (p=0.019). Levels of above 5.6×10^5 c/ml at month 3 showed a 67% specificity and 81% sensitivity for a SDAI85 response at month 6, corresponding to a positive likelihood ratio of 2.6

(95% CI: 1.6-4.1). Patients in the top tertile of month 3 TTV ($>7.8 \times 10^5$ c/ml) had lower SDAI, CDAI and DAS28 and higher SDAI85 response rates at month 6 (OR: 4.18, CI: 1.41-16.42; p=0.012). The highest non-response rates were found in patients within the lowest TTV tertile (Table A), and the highest remission rates were found in the highest TTV tertile (Table B). No patient below a TTV value of 2.7×10^4 c/ml at month 3 showed SDAI85 treatment response at month 6.

Conclusion: Our data suggest that TTV levels in patients with RA treated with INF, ABA or RTX at month 3 are associated with clinical responses at month 6, and thus may constitute a biomarker for therapeutic monitoring.

Abstract THU0101 –Table 1.

A	No response					Total
	SDAI50	SDAI70	SDAI85	SDAI85	SDAI85	
LTIV	43.8%	37.5%	18.8%	0.0%	0.0%	100%
MTTV	15.8%	42.1%	26.3%	15.8%	100%	100%
HTTV	27.3%	18.2%	18.2%	36.4%	100%	100%

Cross-tables: A – Left: depicting distribution of patients in different SDAI response categories at 6 months (non-overlapping) by tertiles of TTV at 3 months (LTIV: low tertile; MTTV: middle tertile; HTTV: high tertile). B – Right: depicting distribution of patients in different disease activity states at 6 months (HDA=high disease activity; MDA=moderate disease activity; LDA=low disease activity; REM=remission) by tertiles of TTV at 3 months

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THU0102 PATIENT DISEASE TRAJECTORIES IN BARICITINIB-TREATED PATIENTS WITH RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO METHOTREXATE

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Background: In RA-BEAM phase 3 study, baricitinib (bari) 4mg demonstrated clinical efficacy in patients (pts) with rheumatoid arthritis (RA) and an inadequate response to methotrexate. Bari, a selective Janus kinase 1/2 inhibitor, is approved for the treatment of moderate to severe active RA in adults in >50 countries. For improved treatment strategy, it is important to understand whether the pt population is composed of distinct pt groups with differing treatment responses and associated baseline characteristics.

Objectives: To identify different treatment trajectories, based on CDAI improvement, in bari 4mg treated pts over 52 weeks; and examine the associated clinical disease measures, structural damage score and baseline characteristics.

Methods: Growth Mixed Model (GMM), a novel latent class mixed model, was used to classify the longitudinal disease patterns instead of