0.0001) and DAS28 ($p < 0.0001$), radiologic progression ($p < 0.0001$), positive RF ($p < 0.0001$), positive ACPA ($p < 0.0001$), elevated ESR ($p < 0.0001$) and CRP ($p < 0.0001$). In multivariate analysis, DAS28 ($p < 0.0001$), radiologic progression ($p < 0.0001$) and positive ACPA ($p = 0.000176$) were significantly associated with an earlier initiation of a biologic DMARD, whereas an older age of first joint pain was a protective factor ($p < 0.0001$) (Table 1).

Conclusion: In this study, less than one third of the ESPOIR cohort patients initiated a bDMARD over the 10-year follow-up. RA poor prognostic factors were associated with earlier initiation as expected.

Figure 1: Biotherapy onset in the ESPOIR cohort

Table 1. Results of the multivariate analysis

Covariates	Hazard-ratios [95% CI]	p-value
Age of 1st joint pain	0.97 [0.96 ; 0.98]	< 0.0001
DAS28	2.04 [1.84 ; 2.26]	< 0.0001
Structural damage on X-rays	2.30 [1.64 ; 3.22]	< 0.0001
Positive ACPA	2.01 [1.40 ; 2.89]	0.000176

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SAT0152

PREVALENCE AND SUCCESS OF 'TRY AND SEE' SUBCUTANEOUS BIOLOGIC DMARD DOSE REDUCTION IN ROUTINE CARE AND COST SAVING IMPLICATIONS

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Background: Biologic disease modifying anti-rheumatic drugs (bDMARD) are widely used in rheumatologic practice. Subcutaneous bDMARDs are licenced in a fixed dose for all indications (RA, PsA, AS) yet therapeutic drug monitoring (TDM) of TNF inhibitors (TNFi) reveals a wide range of serum drug concentrations (1). EULAR recommendations (2) state that 'one can consider tapering bDMARDs' if a patient is in persistent remission (usually by lengthening the interval between subcutaneous injections), and in trials up to 80% sustain remission after tapering over 39 weeks (3). In routine care bDMARD dose reduction is usually initiated on a 'try and see' basis, in the absence of guidelines.

Objectives: To assess the prevalence and success of subcutaneous bDMARD dose reduction in routine care, per disease indication and bDMARD class, and the cost saving implications.

Methods: Dose interval information was collected prospectively in patients on subcutaneous bDMARDs with RA, PsA and AS attending for routine

review at St George's University Hospitals NHS Foundation Trust from October – November 2018. Department practice is that bDMARD dose reduction is discussed (but not mandated) with patients in sustained remission on a 'try and see' basis, without TDM.

Results: Data on 88 patients (female 46) were collected, RA 39, PsA 36, AS 13, mean age 50 years (range 24-78), TNFi n=75, other bDMARDs n=13. The dose interval was per licence in 79.5%, less frequent in 18% and more frequent in 2.5%. In those taking a bDMARD less frequently than per licence, the dose interval was increased by a mean 2.15 x licenced interval (range 1.14 – 6 x); in RA 1.88x, PsA 2.12x and AS 2.64x. Dose reduction had been attempted in 32%, but failed due to loss of efficacy in 43% of these (13.6% of entire cohort), including 50% with RA, 46% PsA and 20% AS. In those attempting a dose reduction, there was no difference in the % sustaining this for Etanercept 57% (8/14) and Adalimumab 50% (5/10) but lower for all TNFi (54%, 13/24) treated patients compared to other bDMARDs (75%, 3/4). Dose reduction had not been attempted at any stage in 66% (RA 72%, PsA 61%, AS 62%). Cost savings from 16 patients with sustained dose reduction over 3 years in this cohort were £97,653, extrapolated to 18% of the entire population (n~1500) on subcutaneous bDMARDs at our Trust makes £1.65 million saving over 3 years.

Conclusion: 'Try and see' dose reduction of subcutaneous bDMARDs has been attempted in one third of patients in routine care, with more success in AS where 80% sustained a lower dose at a mean 2.64 x licenced interval, compared to 50% of RA and 54% PsA patients at 1.88 and 2.12 x licenced interval respectively. Guidelines, possibly based on TDM, are needed to optimise current practice which falls short of the success of dose reduction in clinical trials (3). Even with a 'try and see' approach failing in 43% of attempts, the cost savings are very substantial to the healthcare economy.

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SAT0153

1,25(OH)₂D AND IL-6 BLOCKADE SYNERGISTICALLY REGULATES RHEUMATOID ARTHRITIS VIA SUPPRESSION OF TH17 AND OSTEOCLASTOGENESIS

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Background: Immune cells express vitamin (vit) D receptor and vit D is known as a potent immune-modulator.

Objectives: Based on negative association of serum vit D level with rheumatoid arthritis (RA) disease activity on previous studies, we aimed to evaluate the role of the vit D in treatment response in RA patients on anti-IL-6 receptor antibody – tocilizumab.

Methods: RA patients on tocilizumab were enrolled, and data were collected retrospectively. Disease activity (disease activity score (DAS) 28), serum 25(OH)D level, modified Sharp's score of hand x-ray at the time of tocilizumab initiation and follow up were analyzed. Peripheral blood mononuclear cells (PBMCs) were differentiated into Th17 or osteoclast in the presence or absence of various concentrations of tocilizumab and/or 1,25(OH)₂D. Proportion of Th17 was analyzed by FACS.

Results: Among 98 RA patients on tocilizumab, 34 (34.7%) patients had sufficient serum 25(OH)D level (≥ 30 ng/mL) when tocilizumab was initiated. On 24 weeks, DAS 28 reduction was greater ($64.6 \pm 15.5\%$ vs. $52.7 \pm 20.7\%$, $P=0.004$) and more patients achieved low disease activity (91.2% vs. 70.3% , $P=0.018$) or remission (82.4% vs. 57.8% , $P=0.014$) in vit D sufficient group. On 48 weeks, DAS28 reduction and proportion of patients with remission was greater in vit D sufficient group as well. However, there was no significant difference in hand & wrist erosion progression. In vitro, tocilizumab and active vit D 1,25(OH)₂D treatment synergistically suppressed Th17 differentiation and osteoclastogenesis from PBMC.

Conclusion: RA patients being treated with IL-6 blocker show better response when they have sufficient serum vit D level. Active vit D