start to one year in bm-TX, while 75.6 to 78.7 in tri-TX. Improvement of SvdHS demonstrated better result in bm-TX than in tri-TX significantly ($p < 0.05$).

Table 1. Average values of each parameter and their p -values

	bm-TX	tri-TX	p -value
Women	17 (73.9%)	16 (69.6%)	0.75
age	65.7	70.3	0.16
ACPA	171.1	452.6	0.14
GCs use	26.1%	21.7%	0.85
MTX use	100%	100%	1.00
DAS28-CRP	2.76	2.71	0.70
HAQ-DI	0.603	0.706	0.94
SvdHS	62.39	75.61	0.37
PS-VAS	41	39.7	0.79

bm-TX, a group of rheumatoid arthritis (RA) patient who is undertaken with biologic disease modifying anti-rheumatic drug (bDMARD) and methotrexate (MTX) therapy; tri-TX, a group of RA patient who is undertaken with combination of three conventional synthetic DMARDs therapy; p -value, statistical level of significance used with Mann-Whitney U test. Women express number and percentage in parenthesis. ACPA, anti-cyclic citrullinated peptide antibodies; GCs, glucocorticoid steroid; DAS28-CRP, 28-joints disease activity score with C-reactive protein; HAQ-DI, Health Assessment Questionnaire Disability Index; SvdHS, Sharp/van der Heijde Score; PS-VAS, pain score measured with visual analog scale.

Conclusions: PSM is useful technique to diminish artificial bias. tri-TX is one choice for RA patient, but not superior for clinical results compared to bm-TX.

REFERENCE:

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SAT0230

COMPARISON OF EFFICACY OF TOFACITINIB VS. ETANERCEPT TREATMENT IN RHEUMATOID ARTHRITIS PATIENTS WITH HIGH ACTIVITY DISEASE BY ULTRASOUND EVALUATION WITH POWER DOPPLER (1 YEAR TREATMENT PERIOD).

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Background: Modern clinical recommendations rule us to timely and rational treatment of rheumatoid arthritis (RA) patients with biologics or tofacitinib when traditional DMARDs failed in achievement of remission or low disease activity (LDA). Ultrasound power Doppler (PD) was recently recommended by some investigators for accuracy of evaluation of local inflammation in small joints to predict the possible flares of RA.

Objectives: To compare the efficacy of tofacitinib vs. etanercept in real clinical practice by complex evaluation including PD during 1-year treatment of RA patients with high disease activity.

Methods: In this randomized open study, we assign 30 patients to receive either etanercept 50 mg subcutaneous weekly (10 pts) or tofacitinib 5 mg BID orally (20 pts). There are 21 females and 9 males with severe RA (average DAS 28 >5.8) with inadequate response to methotrexate in effective dose enrolled into the study. Average age was 48.2±5.6 (42,1 for etanercept group and 51,9 for tofacitinib group), average disease history was 5,3 (1,5–25) years. Patients evaluated at baseline, after 3, 6 and 12 months of treatment: number of painful and swollen joints, ESR, C-protein, RF, anti-MCV, DAS 28, SDAI, ultrasound examination of hands and feet (German US7 score) by grey scale (GS) and power Doppler (PD).

Results: Patients in both groups had statistically significant decrease of disease activity. In etanercept group median DAS 28 decreased from 6.05 to 2.5

($p < 0.001$), 5 pts achieved remission, 3 – LDA. In tofacitinib group median DAS 28 decreased from 5.86 to 3.23 ($p < 0.001$), 5 pts achieved remission, 3 – LDA. Number of painful and swollen joints decreased to 3–8 times, ESR and C-protein normalized in 8 patients in etanercept group and 12 pts in tofacitinib group. SDAI evaluation showed lowering down the score of activity from range 37,10 to range 6,50 in etanercept group and from 40,78 to 14,25 in tofacitinib group. US dynamics: median GS score decreased from 6.5 to 2,5 ($p < 0.01$) in etanercept group and from 8 to 3 ($p < 0.01$) in tofacitinib group. Number of bone erosions still unchanged. In PD mode number of joints with hypervascularized synovium decreased from 3 to 0 ($p < 0.001$) in both groups.

Also it was noticed that by 3rd month of the treatment LDA was achieved for 2 patients (out of 10) in etanercept group and 5 (out of 15) in tofacitinib one, and relatively by 12 month – 8 in etanercept group and 8 in tofacitinib. The most significant decrease of SDAI (more than 2 times) was achieved by 3rd month and go further with the same dynamics in etanercept group and slightly less in tofacitinib group.

Conclusions: Integrated evaluation of efficacy of treatment of patients with severe RA showed that both etanercept and tofacitinib have good effect in achieving of remission or LDA (DAS28 and SDAI). Tofacitinib acts similar to etanercept in 3 months of therapy, but then its effect progressed more slowly. PD is additional method of monitoring of sinovial inflammation and shows us the significant regression of tissue hypervascularisation (activity of inflammation) by 6 months of treatment both etanercept and tofacitinib. Follow up of patients within the year and later on helps to adjust therapy.

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SAT0231

EFFECTS OF THE JAK1-SELECTIVE INHIBITOR FILGOTINIB ON GENE EXPRESSION PROFILE IN BLOOD OF PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS

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Background: Filgotinib (FIL), an oral selective JAK1 inhibitor, has shown good safety and efficacy in two phase 2b studies (background methotrexate (MTX, DARWIN 1) and as monotherapy (DARWIN 2)) in active rheumatoid arthritis (RA) patients with inadequate response to MTX^{1,2}. We conducted a large-scale RNA sequencing study of genes expressed in blood samples from these studies.

Objectives: Identify RA-associated gene transcripts that are altered in response to FIL treatment.

Methods: PAXgene blood samples from 242 RA patients receiving either a stable dose of MTX and placebo (PBO) or FIL 200 mg once daily (QD, DARWIN 1); or PBO, FIL 100 mg, or 200 mg monotherapy QD (DARWIN 2), were collected and analyzed at baseline, week 1 and/or week 12. RNA in whole blood was sequenced (Illumina HiSeq 2500) after globin depletion. Differential gene expression analysis was performed on all time-paired data after subtracting gene expression changes in the PBO group. Spearman's rank correlation of gene expression to time, dose, and disease activity score (DAS28) were calculated on samples without missing values. A false-discovery rate (FDR) of 10% was applied for all analyses

Results: Top-ranked gene sets positively associated with DAS28 disease activity at baseline over both studies included interferon alpha (IFN- α) and IFN gamma (IFN- γ) response, IL6/JAK/STAT3 signaling, and toll-like receptor signaling pathways (FDR<10%). Of 197 genes that positively correlated with disease score (increased gene expression with increased DAS28, FDR<10%), 117 (59%) trended toward reduced expression at 12 weeks with FIL in both studies. These genes were enriched in pathways which included granulocyte and macrophage activation. Conversely, of 256 genes negatively correlated with disease score (FDR<10%), 169 (66%) trended toward increased expression post-FIL (figure 1). Of 14724 genes expressed at >1CPM in at least 5% of the samples, 607 were differentially expressed following FIL treatment in either DARWIN1 or DARWIN2 with 48 genes significant in both studies (FDR<10%). Genes reaching significance in at least one study showed consistent magnitude and direction of change in both studies and were enriched in JAK/STAT, innate and adaptive immunity, and autoimmune associated pathways. CISH, SOCS2, SOCS3, VWA5a,