of patients in the liposomal prednisone groups reported AEs related to study drug administration, versus 6% in the methylprednisolone group. Serious adverse events (SAEs) were reported by 4 (8.2%), 1 (1.9%) and 2 patients (4.1%) resp for the liposomal prednisone 75 mg, liposomal prednisone 150 mg and methylprednisolone 120 mg groups. Five of the 7 SAEs were treatment related; these included 4 events of hypersensitivity in the liposomal prednisone arms and one event of viral upper respiratory tract infection in the methylprednisolone group.

Conclusion: In this phase III trial, liposomal prednisone 75 mg and 150 mg were significantly more effective than 120 mg -methylprednisolone in treating patients with a flare of their RA. The overall incidence of AEs was similar across treatment groups, although hypersensitivity appeared to be more common with liposomal prednisone.

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FRI0136

THE EFFICACY AND SAFETY OF SIROLIMUS IN PATIENTS WITH ACTIVE RHEUMATOID ARTHRITIS: A RANDOMIZED AND PARALLEL-CONTROLLED CLINICAL TRIAL

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Background: We have reported previously that the insufficient absolute number or functional defects of regulatory T cells (Tregs) in patients with rheumatoid arthritis (RA)^[1-3], challenging conventional unspecific immunosuppressive therapy. Sirolimus, a mTOR inhibitor, is reported to allow growth of functional Tregs, which would be able to provide new strategy and target for the treatment of RA^[4].

Objectives: To investigate efficacy and safety of sirolimus combined with conventional immunosuppressants for RA treatment.

Methods: In this non-blinded and parallel-group trial, we randomly assigned 62 patients to receive conventional glucocorticoids and immunosuppressants with or without sirolimus at a dosage of 0.5 mg on alternate days for 24 weeks in a 2:1 ratio. The demographic features, clinical manifestations and laboratory indicators including peripheral blood lymphocyte subgroups and CD4⁺T subsets were compared before and after the treatment.

Figure 1: Changes of levels of CD4⁺T cells subsets after different treatments. Effects of treatments were assessed by repeated measures analysis using a mixed-effects model. Two-tailed unpaired t-test was used to compare the disease activity measures between sirolimus and conventional groups. #p<0.05, ##p<0.01 relative to baseline (week 0) in conventional group (blue); *p<0.05 relative to baseline in sirolimus group (red); **p<0.05 compared between groups.

Results: Finally, 37 patients in sirolimus group and 18 in conventional treated group completed 6-month study. By 24 weeks, the patients with sirolimus experienced the significant reduction in disease activity indicators including DAS28, ESR, the number of tender joints and swollen joints ($p<0.001$). Notably, they had a higher level of Tregs as compared those

with conventional therapy alone ($p<0.05$), indicating that sirolimus could partly restore the reduced Tregs. Concomitantly, their usages of immunosuppressants for controlling disease activity were decreased as compared with conventional group with no difference in blood routine, liver and renal functions both before and after the treatment of sirolimus and between two groups ($p>0.05$).

Figure 2: Efficacy of sirolimus in reducing disease activity. Mean DAS28-ESR score (A), ESR (B), mean number of tender joints (C) and swollen joints (D). Overall changes during treatment were assessed by repeated measures analysis using a mixed-effects model. Two-tailed unpaired t-test was used to compare the disease activity measures between sirolimus and conventional groups. Error bars show SD. DAS28: 28-joint disease activity score; ESR: erythrocyte sedimentation rate. #p<0.05, ##p<0.01, ###p<0.001 relative to baseline (week 0) in conventional group (blue); *p<0.05, **p<0.01, ***p<0.001 relative to baseline in sirolimus group (red).

Conclusion: Low-dose sirolimus immunoregulatory therapy selectively up-regulated Tregs and partly replaced the usage of immunosuppressants to control disease activity without over-treatment and evaluable side effect. The further study is required using a large sample of RA patients treated with sirolimus for longer period.

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UPADACITINIB IMPROVES PATIENT-REPORTED OUTCOMES IN PATIENTS WITH RHEUMATOID ARTHRITIS AND INADEQUATE RESPONSE TO METHOTREXATE: RESULTS FROM SELECT-COMPARE

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Background: Upadacitinib (UPA), a selective JAK1 inhibitor, has demonstrated superior improvement in the clinical signs and symptoms of rheumatoid arthritis (RA) compared with placebo (PBO) and adalimumab (ADA).¹

Objectives: To evaluate the effect of UPA vs PBO and vs ADA on patient-reported outcomes (PROs) at Week 12 in SELECT-COMPARE (NCT02629159), a randomised controlled trial (RCT) in an active RA population with inadequate responses to methotrexate (MTX).

Methods: Patients in SELECT-COMPARE, a phase 3 RCT, received UPA (15 mg once daily), PBO, or ADA (40 mg every other week) while on background MTX therapy. The following PROs were collected prospectively: Patient Global Assessment of Disease Activity (PtGA) by visual analogue scale (VAS), pain by VAS, Health Assessment Questionnaire Disability Index (HAQ-DI), duration and severity of morning (AM) stiffness, health-related quality of life by Short Form-36 (SF-36), Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F), and Work Instability Scale for RA (RA-WIS). Least squares mean (LSM) changes from baseline (BL) to Week 12 were based on mixed-effects repeated measures