(90.7±56.5 pg/ml; 68.8±37.7 pg/ml) ($p<0.05$). Correlation analysis showed a significant positive correlations between TREM-1 and DAS-28 scores ($p<0.05$). In the RA group, while TREM-1 levels (127.9±61.7 pg/ml vs 198.4±105.7 pg/ml) were significantly reduced by methotrexate intake, but presence of severe periodontitis resulted in higher TREM-1 and PGLYRP1 ($p<0.05$).

Conclusion: The present study demonstrated that there is an increased levels of TREM-1 and PGLYRP1 in serum of patients with RA which is further potentiated by periodontitis. Moreover, TREM-1 correlates with clinical disease activity. MTX therapy of patients with RA is accompanied by reduced TREM-1 levels in serum.

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THU0082

EFFECT OF TREAT-TO-TARGET STRATEGY ON DISEASE ACTIVITY AND RADIOLOGIC OUTCOMES IN RHEUMATOID ARTHRITIS: RESULTS FROM A 9-YEAR CHINESE COHORT

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Background: Treat-to-target (T2T) strategy has been implied in clinical practice for 9 years. However, a recent study showed that the radiologic outcome didn't associate with the adherence to protocolized treatment in clinical practice[1]. Furthermore, in clinical practice, nonadherence to a T2T protocol has been reported[2]. The reasons varied. In our previous study, there was a substantially decrease of RA activity over 8 years after tight control applied[3]. However, whether T2T strategy can improve the long term radiographic outcomes in daily practice is still unknown.

Objectives: the aim of our study was to determine the effect of treat to target (T2T) protocol on disease activity and radiographic outcomes in a 9-year Chinese RA cohort.

Methods: RA patients who were followed-up for more than 1 year in a longitudinal observational cohort were included in our study. The adherence rate of the patients was evaluated by the calculation of the percentage of whether the patients followed the time schedule to clinic. Adherence rate ≥ 0.7 was defined as adherent to T2T. The overall disease activity was evaluated by time adjusted mean (TAM) method. The radiological change was evaluated by radiographies of the hands regularly, with the interval between 1 and 3 years. We defined the primary radiological outcome as Δ modified total Sharp score (mTSS) >3 over the follow-up time.

Results: There were 209 patients enrolled in our study. The median interval of two radiographies was 31.0 (17.0, 50.0) months. 45.0% of patients got clinical remission using TAM DAS28(ESR) and 25.4% of patients got the radiological outcome. Adherence rate was significantly negatively correlated with the mean disease activity [β coefficient=-0.423 (-0.540, -0.298), $p=0.000$, using DAS28ESR]. Moreover, adherent to T2T and baseline high disease activity (HDA) were independent predictors of radiological outcome [adherent to T2T: HR=0.47 (0.27, 0.82), $p=0.007$; baseline HDA: HR= 2.04 (1.16, 3.62), $p=0.014$] (Figure 1). As for bone erosion aspect, besides baseline HDA and adherent to T2T, baseline bone erosion existing also independently associated with erosion progression [HR=1.90 (1.12, 3.23), $p=0.018$]. When divided the adherence rate into three subgroups, we can find that patient not following the T2T protocol were more easily to get radiological progression. There was statistically significant difference among three groups ($p=0.004$ using log rank, and $p=0.001$ using Tarone ware). To our surprise, increased adherence rate didn't provide more benefit when adherence rate was more than 0.9 (Figure 2). In patients who got overall clinical remission, we found none of these variables correlated with the radiological outcome.

Conclusion: The mTSS progression was associated with baseline HDA and adherence rate, independently. Adherence to T2T strategy may improve the remission probability and halt the radiological deterioration, especially in the patients who didn't get clinical remission.

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Figure 1 Predictors of radiological outcome by the multivariate COX regression. HDA, high disease activity; DMARDs, disease modifying anti-rheumatic drugs; T2T, treat to target (adherence rate ≥ 0.7).

Abstract THU0082 – Figure 1

The survival curve of mTSS progression in three different adherence groups

Figure 2 The survival curve of patients having radiological progression in different adherence rate groups. Patient whose adherence rate ≤ 0.7 were more easily to get Δ mTSS >3 . There was statistically significant difference among three groups ($p=0.004$ using log rank, and $p=0.001$ using Tarone ware).

Abstract THU0082 – Figure 2

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THU0083

ROLE OF CLINICAL IMPACT, DISEASE-SPECIFIC KNOWLEDGE AND BELIEFS ABOUT MEDICATION ON THERAPEUTIC ADHERENCE IN RHEUMATOID ARTHRITIS: AN INTEGRATIVE STRUCTURAL EQUATION MODELING APPROACH

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Background: Treatment of rheumatoid arthritis (RA) to remission is the optimal way to ensure control of symptoms, prevention of structural damage, optimization of function and quality of life. Adherence to medical treatment is, therefore, an integral part of a comprehensive and successful management of RA.

Objectives: We interrogated the influence of three distinct domains of RA clinical impact (disease activity, functional limitations, mood disturbance), patient specific knowledge about RA and beliefs about medications on treatment adherence.

Methods: We evaluated 285 patients with established RA from a single center. In the proposed model, disease activity DAS28(CRP), mood disturbance (Patient Health Questionnaire-9 depression scale and SF-36 Mental Health domain), functional limitations (Health Assessment Questionnaire Disability Index and SF-36 Physical Function domain) and RA-specific knowledge (Patient Knowledge Questionnaire) were expected to predict beliefs about the necessity of RA medications and concerns about them (Beliefs about Medicines Questionnaire) which, in turn, would impact adherence (Simplified Medication Adherence Questionnaire). Cross-sectional multi-group structural equation modeling evaluated the model separately in patients treated with bDMARDs and those only receiving csDMARDs.

Results: RA-specific knowledge was not significantly associated with medication beliefs or adherence and therefore was dropped from the model. Modification indices suggested addition of two supplementary paths (dashed lines) that significantly improved the proposed model fit for both

treatment groups, shown in Figure 1. Disease activity, functional limitations and mood disturbance influenced adherence via multiple and often competing pathways, directly or indirectly through a necessity/concerns evaluation by the patient. Notably, RA activity directly promoted adherence in patients on bDMARDs ($p<0.01$). In contrast, in patients on csDMARDs, RA activity had an indirect, net negative effect on adherence ($p<0.01$); the main pathway was through worsening mood disturbance which in turn attenuated adherence ($p<0.01$). This may imply that the experience of disease activity in patients requiring bDMARDs may be sufficiently impactful to independently promote medication adherence. In contrast, disease activity may be largely experienced as depressed mood in patients on csDMARDs which may in turn overwhelm their capacity to adhere. Additionally, mood disturbance adversely influenced adherence directly in patients on csDMARDs ($p<0.01$) yet there was no significant direct or net indirect effect of mood disturbance on adherence to biologics. Functional limitations fostered adherence through enhanced awareness of medication necessity ($p<0.05$).

Conclusion: Distinct domains of the impact of clinical RA influence treatment adherence directly or indirectly through a necessity/concerns framework. Mood disturbance and concerns about medications may represent complementary yet salient intervention targets of comprehensive RA management promoting medication adherence; the former may be more relevant for patients on csDMARDs whereas the latter may be more significant with bDMARDs.

Figure 1: Contributions of clinical RA impact and beliefs about medication on therapeutic adherence.

Abstract THU0083 – Figure 1

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THU0084

THE LONG-TERM OUTCOME OF INTRA-ARTICULAR GLUCOCORTICOID INJECTED JOINTS ON RADIOGRAPHIC CHANGES IN PATIENTS WITH RHEUMATOID ARTHRITIS: A REAL WORLD DATA FROM A SINGLE CENTER

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Background: Intra-articular glucocorticoids injections (IAGI) have been an important part of a treat-to-target strategy in patients with Rheumatoid arthritis (RA). However, it is not known the long-term outcome of glucocorticoids-injected joint.

Objectives: To explore the long-term outcome of IAGI, the impact on the radiographic joint space narrowing and erosion in patients with RA.

Methods: We performed a retrospective cohort study of IAGI for patients with RA. We identified 88 RA patients who received IAGI into wrists or hand joints determined by ultrasound and had pre-injection and follow-up hand radiographs from a rheumatology department in a tertiary hospital. As a comparator, 88 RA patients who had not received IAGI although they had clinical synovitis (defined as both tender and swollen joint) in wrist or hand joint were randomly selected (Non-IAGI group). Hands radiographs scored using the van der Heijde-modified Sharp Score (HSS) method was used to assess radiographic progression (Δ HSS ≥ 1 in joint areas of synovitis). Multivariable Cox regression estimated the hazard ratio (HR) and 95% confidence interval (95% CI) for radiographic progression of joint with synovitis.

Results: Among 88 RA patients who received IAGI (median age, 60 years, 42 (48%) patients had radiographic progression of triamcinolone-injected joint, while 38 patients (43%) in non-IAGI group (median age, 57 years) presented radiographic progression of joint area suffered clinical synovitis (not significant) in the median 2 years follow-up. At baseline, IAGI group presented longer disease duration, lower acute phase reactant levels and less involvement of proximal interphalangeal joints than non-IAGI group did. In the IAGI group, a median number of 1 (IQR, 1–2) joint was injected. After 3 months from IAGI, 63.5% of patients reported improvement of injected joint and 16.5% of patients received a second or more IAGI. The radiographic progression of injected joint (Figure 1) was pronounced at the wrists (87.8% of radiographic progressor). The level of C-reactive protein at active arthritis, baseline HSS and power Doppler grade in ultrasound was higher in radiographic progressor than in non-radiographic progressor. A high baseline HSS of hands (HR, 1.021 [95% CI, 1.002–1.040]), wrist joint involvement (HR, 5.356 [95% CI, 1.705–16.813]) and use of NSAIDs (HR, 0.373 [95% CI, 0.179–0.776]) were associated with radiographic progression in joint areas which suffered active synovitis.

Abstract THU0084 – Figure 1

Conclusion: In patients with RA, IAGI did not have an additional effect on radiographic progression in the next 2 years. High baseline HSS and wrist joint involvement are independent risk factors of radiographic progression in joints suffered synovitis.

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