Background: Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease with unknown etiology that primarily affects the peripheral joints and, over time, leads to loss of mobility if untreated. The prevalence of RA in Myanmar was 1.3% in 2004.2 According to Rheumatology outpatient clinic records of Mandalay General Hospital, there were 402 old patients and 104 new RA patients in 2017 and 453 old patients and 102 new RA patients attending in 2018. In addition to the main effects of vitamin D (vit D) on bone and calcium metabolism, it has other roles in the body, including modulation of cell growth, neuromuscular and immune function, and reduction of inflammation.3 Due to difference in ethnic origins and geographical distribution, the results may be varied when it is done in sunshine rich area such as Myanmar. In the present study, vitamin D supplementation on the disease activity of RA by DAS28 was determined.

Objectives: 1.To compare DAS28 score before and 12 weeks after vitamin D loading dose supplementation in RA patients with normal serum vitamin D level 2. To compare DAS28 score before and 12 weeks after vitamin D 1000 IU per day per week supplementation in RA patients with normal serum vitamin D level

Methods: 58 patients with RA attending to medical unit I, II, III and Rheumatology outpatient clinic of Mandalay General Hospital were recruited. Disease activity was assessed according to DAS28. Patients with DAS28 ≥ 2.6 were assessed for serum vitamin D status. Those with vitamin D level < 20 ng/ml were defined as vitamin D deficient and vitamin D ≥ 5, 000 IU per day for 8 weeks, then 1, 000 IU per day for 4 weeks were given orally for a total of 12 weeks duration. Patients with normal vit D level (≥ 20 ng/ml) were provided with Vit D 1000 IU per day for 12 weeks.

Results: Before 12 weeks of Vit D supplementation, 53.45% of patients with RA (2 male and 29 female) were Vit D deficient and 46.55% of patients (1 male and 26 female) had normal serum vit D level. The largest age group was between 46-55 years in both groups which comprised 41.38% of patients. In patients with Vit D deficiency, mean serum Vitamin D level was 10.32 ± 4.26 ng/ml and, in patients with normal vit D level, mean serum Vitamin D level was 36.51 ± 17.76 ng/ml. After 12 weeks of Vit D supplementation, out of 51 patients with Vit D deficiency, serum Vit D level of 23 patients became ≥ 20 ng/ml although only 3 patients were still Vit D deficient. Both groups showed improvement in clinical and biochemical parameters such as VAS, ESR, tender and swollen joint counts.

Before 12 weeks, more than 40% of patients had high or moderate disease activity in each group. After 12 weeks of Vit D supplementation, in Vit D deficient group, most patients (54.84%) had disease remission and 22.58% of patients were found to have moderate disease activity. Disease activity of 19.35% of patients became low. Only one patient had high disease activity.

After 12 weeks of Vit D supplementation, in Vit D deficient group, disease activity of most patients (48.15%) became low and 33.33% had remission. 18.52% of patients with RA were found to have moderate disease activity. No patient had high disease activity. Although there was no correlation between serum Vit D level and DAS28, DAS28 score was significantly decreased from 5.27 to 2.79 (P = 0.0000) after 12 weeks of Vit D loading dose supplementation in RA patients with Vit D deficiency. Similarly, DAS28 score of RA patients with normal Vit D level was significantly decreased from 5.04 to 2.71 (P = 0.0000) after 12 weeks of Vit D 1000 IU supplementation.

Conclusion: The present study revealed that vitamin D supplementation was effective in reducing disease activity in patients with Rheumatoid arthritis. These findings may be helpful in the treatment of Rheumatoid arthritis.

Disclosure of Interests: None declared.

References:

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