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Title: Evaluation of vitamin D replacement in the tuberculosis patients

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Body: Introduction One hypothesis is that low serum vitamin D (25[OH]D) level is a risk factor for tuberculosis infection. Historically, 25[OH]D supplementation had been used as a treatment for Tuberculosis. In our study we have assessed the effect of two commonly used 25[OH]D supplements on the 25[OH]D levels in active TB (TB) patients. Methods and results We reviewed 113 TB cases from 2010 in our retrospective study. The study population was consisted of 68 males and 45 females. 25[OH]D levels were checked in 96% (65/68) and 98% (44/45) of male and female patients respectively. 56/65 males were 25[OH]D deficient (<20ng/ml), whereas 40/44 females were 25[OH]D deficient. 53/56 males and 38/40 females, who were 25[OH]D deficient, received 25[OH]D replacement therapies with Adcal-D3 (cholecalciferol, vitamin D3), ergocalciferol (calciferol, vitamin D2) or combination of these two agents. We then assessed the effect of these agents on the 25[OH]D level. Only 76% (29/38) of males and 87% (46/53) of females who received replacements, had their 25[OH]D levels repeated in 3-6 months. In both genders, 25[OH]D levels increased with the treatment (p <0.0001 in both genders). We also observed that the average increase of 25[OH]D levels with Adcal-D3, ergocalciferol and combination of these two agents were 14.6±5.4, 20.6±8.9 and 25.8±5.3 respectively. We found that the increase of 25[OH]D level with combination of two agents were greater than Adcal-D3 alone (p <0.0001). Conclusions Consistent with other studies, we have noticed that most of the TB patients had low 25[OH]D levels. Majority of these patients responded to supplementation, regardless of the gender or the therapeutic agent(s).