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5 DAY CONTINUOUS DOSING WITH ORAL NANO VIT.D3 – A CASE SERIES

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Abstract

Vitamin D is highly essential for various functions of human body including proper immunity. Deficiency of vitamin D is mostly undetected and also a major underlying cause for various diseases and disorders .The Prevalence of Vitamin D deficiency in India is very high, detection and immediate management of severe vitamin D deficiency is an essential step especially given the current situation of the COVID 19 Pandemic where proper immunity is an important factor for survival. This case series is an update on the impact of 5 day continuous dosing with oral Nano Vit.D3 on serum vitamin D levels in individuals with severe vitamin D deficiency without co-morbidities.

Keywords: *Vitamin D, Deficiency, COVID, Therapy, Serum Vitamin D.*

Introduction

Vitamin D3 a micronutrient essential for calcium homeostasis and bone formation in human body [1]. vitamin D3 is also a pre-hormone endogenously produced when skin is exposed to sufficient amounts of UV-B rays it affects gene regulation after it is converted to 1,25-dihydroxyvitamin D3 (1,25(OH)2D3), which is the high affinity ligand of vitamin D receptor (VDR) [2]. VDR's first function was the control of metabolism, in order to support the evolving immune system [3]. Thus, VDR initially specialized in the modulation of innate and adaptive immunity for fighting against bacterial and viral infections [4], deficiency of Vitamin D may also be one of the reasons for increased vulnerability, particularly in elderly persons, against viral infections, such as the recent coronavirus (COVID-19) outbreak [5]. Vitamin D also has an effect upon cell proliferation and differentiation as well immunologic ability to maintain tolerance and to promote protective immunity [6]. Researchers discovered a strong correlation between vitamin D levels and cytokine storm, a hyper inflammatory condition caused by an overactive immune system, they also found a correlation between vitamin D deficiency and mortality. "Cytokine storm can severely damage lungs and lead to acute respiratory distress syndrome and death in patients," "Cytokine storm is the reason for majority of COVID-19 related deaths It is the complications from the misdirected fire from the immune system." Not only does vitamin D enhance human innate immune systems, it also prevents human immune systems from becoming dangerously overactive. This means that having healthy levels of vitamin D (>50ng/ml) could protect patients against severe complications and decrease death, from COVID-19. "However, it is clear that vitamin D deficiency is harmful, and it can be easily addressed with appropriate supplementation.

Results

Case 1:

A 30 yr. old female subject underwent for serum vitamin D test for which she was found to be deficient with the range of 16.16 ng/ml. immediately after this test the subject was kept on a continuous 5 day therapy with the dose of 60000 IU 27nm Vitamin D shots. After 5 day continuous therapy with dose of 60000 IU Vitamin D shots the subject sample was collected for the Vitamin D test. Surprisingly we have noticed a drastic rise in vitamin D levels which is 62.1ng/ml without any side effects.

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Case 2:
A 34 yr. old male subject underwent for serum vitamin D test for which he was found to be deficient with the range of 14.87 ng/ml. the subject was kept on a continuous 5 day therapy with the dose of 60000 IU 27 nm Vitamin D shots. After 5 day continuous therapy with the dose of 60000 IU of Vitamin D shots the subject sample was collected for the vitamin D test to check the vitamin D level rise. We have noticed that the Vitamin D levels was increased up to 57ng/ml without any side effects which is a positive side of this therapy.

Case 3:
A 38 yr. old male subject underwent for serum vitamin D test for which he was found to be deficient with the range of 13.24 ng/ml. the subject was given a continuous 5 day therapy with the dose of 60000 IU 27nm Vitamin D shots. After 5 day continuous therapy with the dose of 60000 IU of Vitamin D shots the subject sample was collected for Vitamin D test to check the rise in Vitamin D levels. We have noticed that the vitamin D level was increased up to 65 ng/ml without any side effects.

Case 4:
A 39 yr. old Male subject underwent for serum vitamin D test for which he was found to be insufficient with the range of 27ng/ml. the subject was kept on continuous 5 day therapy with the dose of 60000 IU 27nm Vitamin D shots. After 5 days continuous therapy with the dose of 60000 IU of Vitamin D shots the subject sample was collected for vitamin D test to check the rise in Vitamin D levels. We have noticed that the Vitamin D level was increased up to 74.5ng/ml without any side effects.

Case 5:
A 30 yr. old male subject underwent for serum vitamin D test for which he was found to be deficient with the range of 15.7ng/ml. the subject was kept on continuous 5 day therapy with the dose of 60000 IU 27nm Vitamin D shots. After 5 days continuous therapy with the dose of 60000 IU of Vitamin D shots the subject sample was collected for vitamin D test to check the rise in Vitamin D levels. We have noticed that the vitamin D level was increased up to 60ng/ml without any side effects.

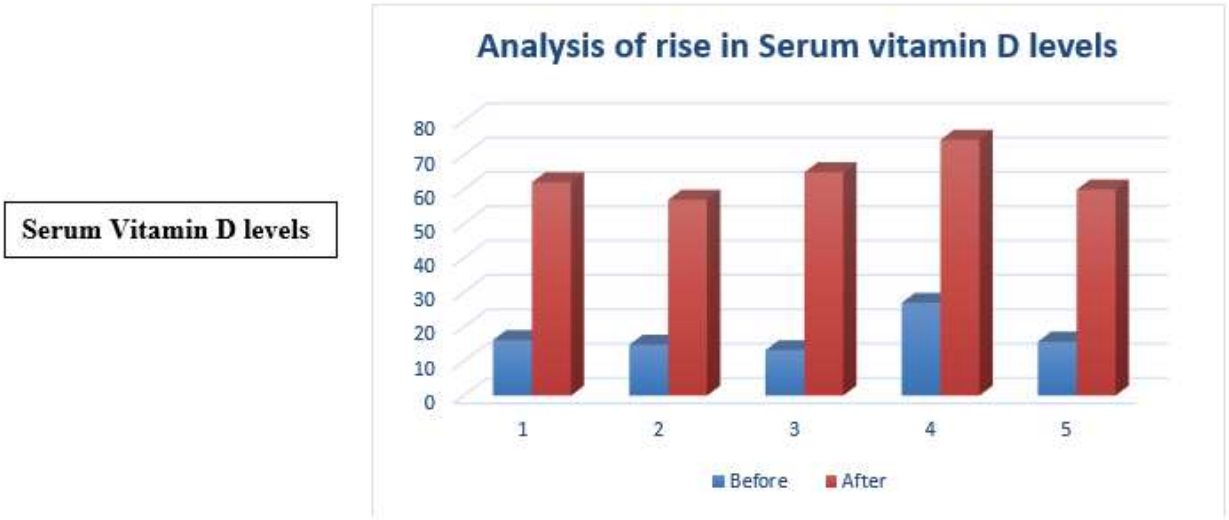

Figure 1

Discussion

Sunlight can be seen in most days of the year but it has been found that close to 80-90% of individuals are vitamin D deficient [7].In our study we initially included 10 subjects within the age group of 30-45 years who were all tested for

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vitamin D deficiency and it was found that all the 10 subjects were having severe vitamin D deficiency and 5 of them were having other co-morbidities such as diabetes and hypertension and hence, excluded them from the study. The subjects were given oral Nano vitamin D3 60,000 IU for 5 days continuously after which the serum vitamin d levels were measured again it was found that in subject 1 the level was increased from 16.16 to 62.1 ng/ml with 9.1ng/ml per dose rise, in subject 2 the level was increased from 14.8 ng/ml to 57ng/ml with 8.5ng/ml per dose rise , subject 3 the level increased from 13.2 ng/ml to 65ng/ml with 10.3ng/ml per dose rise subject 4 the level increased from 27ng/ml to 74.5ng/ml with 9.5ng/ml per dose rise and subject 5 the level increased from 15.7 ng/ml to 60ng/ml with 8.8ng/ml per dose rise. From the above cases the average per dose rise in serum vitamin D levels is found to be approximately 9 ng/ml which is an indication of high effectiveness of the oral Nano vitamin D3 in immediately restoring the serum vitamin d levels.

As per recent study, it was found that each 4ng/ml increase in 25(OH) D was associated with a 7 % lower risk of lung infection [8]. Interestingly, when 25(OH) D concentrations were analyzed with logistic regression as a continuous exposure in 0.4ng/ml increments, the odds of ARDS decreased by 17% for every 0.4ng/ml increase in 25(OH) D [9]. Patients that received a high dose of Vitamin D supplementation achieved normalization of Vitamin D levels and improved clinical recovery evidenced by shorter lengths of stay, lower oxygen requirements, and a reduction in inflammatory marker status [10]. Clinical studies have shown that Vitamin D can exert anticoagulant effects. Vitamin D, a lipid-soluble vitamin, can be administered as a draught. Vitamin D supplementation is safe and has rare toxic events. Vitamin D may have a role in the prevention and treatment of COVID-19 [11]. High dose, 60000 IU oral Vitamin D supplementation for 7 days continuously 25(OH) D> 50 ng/ml helped to achieve SARS-CoV-2 RNA negativity in asymptomatic vitamin D-deficient individuals along with a significant decrease in inflammatory markers[12].

Conclusion

The average rise in serum vitamin D levels after 5 days continuous dosing with 60,000 IU oral Nano Vitamin D 3 in vitamin D deficient individuals was found to be around 8-9 ng/ml per dose hence, 5 day continuous dosing with 60000 IU Vitamin D is ideal to immediately restore the serum vitamin D levels and correct the deficiency.

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