



ORIGINAL RESEARCH PAPER

Pharmacology

AN OBSERVATIONAL STUDY ON THE LEVEL OF VITAMIN D IN POSTMENOPAUSAL WOMEN WHO ARE PRESCRIBED AT DIFFERENT DOSAGE

KEY WORDS: Vitamin D , Dosage, Postmenopausal women.

Dr. T. Janagan

Prof. M.D. Pharmacology Sree muthukumaran medical college and hospital.

Dr .S. A. Sridevi*

Prof.M.D. Pharmacology, ACS medical college and hospital. *Corresponding Author

ABSTRACT

Objective: To find the effect of increasing oral doses of vitamin D in post menopausal women with Vitamin D insufficiency with recommended calcium intake. Serum 25-hydroxyvitamin D (25-[OH]D) is considered as the best biomarker of clinical vitamin D status. This helps for the average recommended dosage in our population. It is an observational study on postmenopausal women taking Vitamin D at different dosages.

Methods: 76 healthy postmenopausal women participated in the study for a period of 6 months. Women taking different dosages like 400, 800, 5000, 20000, 60000 IU whose earlier report showed Vitamin D insufficiency were collected.

Results: women who took 60000 IU every fortnight showed better rise in vitamin D when compared with other dosage range.

Limitations: The study had not taken the level of calcium into consideration. Conclusion: vitamin D3 dosage of 60000 IU was found to have better improvement than the daily dose of small amount of Vitamin D.

INTRODUCTION

Aside from the classic actions of vitamin D on bone metabolism and calcium homeostasis, experts postulate that it may play an important role in cellular proliferation and differentiation and survival of cells in disorders of immunity (1), as well as in cancer (2). Serum 25-hydroxyvitamin D (25-[OH]D) is considered the best biomarker of vitamin D status (3). Vitamin D is a unique nutrient because its requirement can be met by both endogenous production from sunlight and dietary sources, which complicates determining the body's daily nutritional requirements. To better quantify requirements for intake of nutrients, including vitamin D, the Institute of Medicine (IOM) and the U.S. National Academy of Science developed a system known as Dietary Reference Intakes (3)

There is still an ongoing discussion to define the optimal 25OH vitamin D (25OHD) serum level for maintenance of bone health, and also what effective vitamin D replacement therapy should involve. In other words, it is not clear which dosing regimens should be used in different populations. However, the evolving consensus is now to recommend a 25OHD target level of 75 nmol/L in fragile elderly subjects who are at elevated risk of falls and fractures, and at least a level of 50 nmol/L for the adult population [4,5]. Thus far, there is no general agreement regarding the dose or the D2/D3 of vitamin D supplementation to reach the target level, even though there are several data showing the different impacts on increasing circulating 25OHD levels in patients on vitamin D supplements, of characteristics such as body mass index (BMI) (accounting up to 30% of variation in circulating 25OHD), type of supplement (vitamin D2 or D3), age, concomitant intake of calcium supplements and baseline 25OHD [6]. There is no universally accepted threshold at which initiating vitamin D supplementation would achieve the greatest impact. Therapeutic strategies that aid adherence to treatment with the aim of providing long-term vitamin D supplement are of clinical interest[7].

STUDY METHODOLOGY:

The postmenopausal women who came to the regular general check up for other ailments were spotted out. Their blood investigations whose Vitamin D were insufficient was collected. They were asked for the different dosage of vitamin D prescribed to them by their previous physicians. The total number of women who were recruited for this study was 76. Their calcium were not included in this study. Only those who were recommended different dosages of Vitamin D alone included. They were all counselled to take their regimen without fail by tracking it with the help of reminders in their mobile app. They were asked to bring empty sachets to check for drug compliance. Vitamin D levels were re assessed in the same respective labs for comparison.

RESULTS:

The Vitamin D level at the end of 2 month and 6 month for different dosage were tabulated as in table 1.

Table 1

| No of participants | Vitamin d dosage in units | Vitamin D at the end of 2month | Vitamin D at the end of 6 month |
|--------------------|---------------------------|--------------------------------|---------------------------------|
| 14 | 400 | 28ng/ml | 54ng/ml |
| 21 | 800 | 31ng/ml | 58ng/ml |
| 19 | 5000 | 42ng/ml | 64ng/ml |
| 11 | 20000 | 52ng/ml | 72ng/ml |
| 11 | 60000 | 60ng/ml | 84ng/ml |

DISCUSSION :

Here the 400, 800 and 5000 IU were given as a daily dose. 20,000 and 60,000 IU were given once in fortnight. It was found that the fortnight dosage gave better improvement in vitamin D level within 2 months than daily dose regimen. All the dosages at the end of 6 month showed improvement in vitamin d level as compared to their old values.

CONCLUSION:

So this study concludes the fact that there is a quick response with a higher dose of vitamin D than the recommended daily low dose. This helps to boost the bone metabolism by stabilising the Vitamin D status in the body.

Limitations:

This study did not take into account the calcium status of the women. Also, a high dose of Vitamin D may result in toxicity in elderly population.

Future Recommendations:

The study should be conducted in a large sample size taking into consideration the calcium level, the cost and the side effects of Vitamin D.

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