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Research Article

PREVELANCE OF VITAMIN D DEFICIENCY IN PATIENTS COMING TO A TERTIARY CARE HOSPITAL IN INDIA

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ABSTRACT

The study conducted in a tertiary care hospital regarding the vitamin D deficiency in patients coming to the hospital concludes that out of the 2955 patients studied, 1769 patients were found to be deficient in vitamin D and 603 were found to have levels below international standards which show high prevalence of vitamin D insufficiency in otherwise healthy adults.

It is quite an alarming scenario as vitamin D deficiency can affect bone health which ultimately impairs the quality of life of the patients. The test to confirm vitamin –D deficiency is costly (around 2000 Indian rupees) and cannot be afforded by most of the patients. Hence it is practical to advice all people living in Vitamin D deficient country like India to take Vitamin D supplement 60000 International units once a week (cost is around 25 Indian rupees) initially for 3 months and then monthly once lifelong in order to prevent vitamin-D deficiency further. The incidence of Vitamin D toxicity will be very rare if this regimen is followed. Further studies are warranted to find out the incidence of vitamin D deficiency in a larger population and also to look for any major Vitamin D toxicity

INTRODUCTION

Vitamin D is a fat soluble vitamin that not only benefits our bone health by regulating calcium and phosphorous but also have many other health benefits because of its anti-inflammatory and immunomodulatory effects. More than 30 sites in the body have vitamin D receptors (VDRs) which plays a vital role in the management of high blood pressure, high cholesterol, muscle weakness, multiple sclerosis, rheumatoid arthritis, chronic obstructive pulmonary disease, asthma, bronchitis, premenstrual syndrome, various skin conditions and preventing autoimmune diseases and cancer.

Overt vitamin D deficiency is characterized by hypocalcaemia, hypophosphatemia, osteomalacia and rickets in children and osteomalacia in adults. The Institute of Medicine (IOM) suggests that level below 30 ng/ml is considered to be vitamin D deficiency. Vitamin deficiency can lead to the loss of a protective barrier against multiple diseases. It can lead to secondary hyperparathyroidism which is then manifested as accelerated bone loss and phosphaturia.

When this is further prolonged it will lead to osteomalacia in adults and children rickets in pediatric age group. Associated symptoms may then include bone pain, tenderness, muscle weakness, fracture, and difficulty in walking.

Vitamin D production is mainly UV-B dependent. It is calculated that 5-10 minute sun exposure atleast thrice a week is needed for its sufficient production. Thus cause of vitamin d deficiency is mainly attributed to life style and environmental factors that reduce sunlight exposure which includes sunscreen, clothing, age, pollution, the zenith angle of sun and limited outdoor activity. The anthropological record indicates that we are exposed to considerably less ultraviolet radiation and about 1 billion people worldwide have a vitamin deficiency particularly prevalent among elderly people.

Objective

To assess 25-hydroxyvitamin D status and its prevalence in patients coming to a tertiary care hospital in India.

Design

The data regarding the serum levels of vitamin D were collected retrospectively and the study extended over a period of 1 year. Data was collected through medical records, patient electronic medical records. Both inpatients and out patients who took vitamin D test were included in the study. Those patients with serum Vitamin-D less than 20ng/dl were considered deficient, those between 21-30 ng/dl were considered as insufficient and those above 30 ng/dl were considered normal/sufficient.

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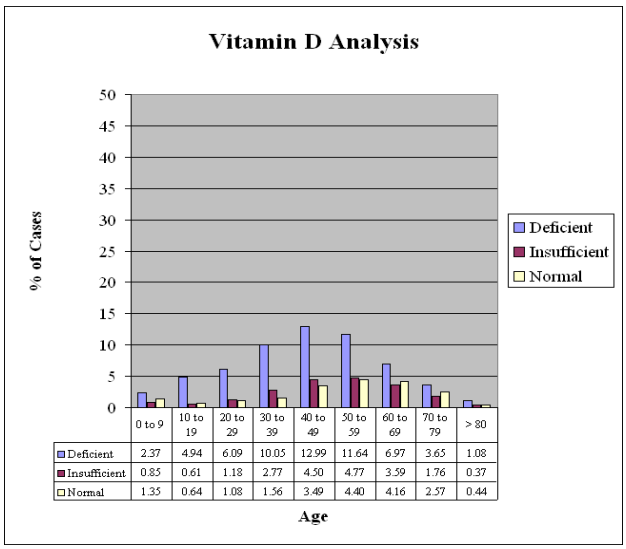
RESULTS

A total of 2955 patients were analysed, of that 1986 were females and 969 were males. The prevalence of vitamin D deficiency were analysed through standard guidelines. Out of 2955 patients analysed, 1769 were found to be deficient (1248 females and 521 males) and 603 were insufficient (370 females and 233 males) and 583 were normal (368 females and 215 males). Their age wise distribution is presented in graph 1. It was shown that 12.99 % of the cases that are deficient fall under the age group of 40-49. i.e., people under the age group of 40-49 are more prone to vitamin D deficiency.

Table 1

	Females	Males	Total
Deficient	1248	521	1769
Insufficient	370	233	603
Normal	368	215	583
Grand Total	1986	969	2955



Graph 1

CONCLUSION

The study conducted in a tertiary care hospital regarding the vitamin D deficiency in patients coming to the hospital concludes that out of the 2955 patients studied, 1769 patients were found to be deficient in vitamin D and 603 were found to have levels below international standards which show high prevalence of vitamin D insufficiency in otherwise healthy adults.

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