

Whether Indian People are in Epidemic of Vitamin D Deficiency or Should it is Necessary to Revise the Normal Cut Off Value of Vitamin D ?

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Abstract:- Calciferols are group of lipid soluble compounds with a 4-ringed cholesterol backbone and refer to both, Vitamin D3 i.e. Cholecalciferol and Vitamin D2 i.e. ergocalciferol. In general as Vitamin D3 is the active component of Vitamin D whether reference of Vitamin D comes, we used Vitamin D3 as a terminology, Vitamin D mainly near about 90 % is synthesized in the sun under sun exposure, Vitamin D is useful in maintaining the normal levels of calcium and phosphate that are required for normal mineralization of bone, muscle contraction nerve, conduction and general. Cellular function in all cells of the body.

In India, in various studies, it is observed that in healthy asymptomatic people show low values of Vitamin D inspite of exposure to sufficient sun rays, proper diet intake.

Age, sex, geographical situation, these factors not affecting the value of Vitamin D.

Keywords:- Vitamin D, Cholecalciferol, Sources of Vitamin D, Rickets, Osteomalacia, Cut off values, Epidemic of Vitamin D, Deficiency, prevention at Nation level.

I. INTRODUCTION

Circulating metabolite of Vitamin D is serum 25 hydroxy vitamin D3 (25 HD3) mainly. It is synthesized in the skin from sun rays and some dietary intake Serum level of 250 H VitD3 is consider as sensitive index of Vitamin D status. Vitamin D is fat soluble vitamin. It is most important Function is related with normal muskuloskeletal system. Apart from this various studies were carried out in Indian and other countries to study its normal range, complications of its deficiency related with other systems of body. Mainly Osteomalacia in adults and rickets in children and Fracture associated with Vitamin D deficiency. Secondary hyperparathyroidism is also due to vitamin D deficiency.

Various studies concludes that all most in every country facing the problem of Vitamin D deficiency in healthy children, young adults, middle aged and elderly adults. It is question mark for mainly Indian people if <20mg/ml is considered as a cut off value for 25 (OH)D3

concentration then we are in epidemic of Vitamin D deficiency or further scientific research studies require to low the normal cut off value of 25 (OH)D3. As majority of the patients or studies done on Healthy Volunteers having no signs and symptoms of Vitamin D3 deficiency shows less values than cut off value i.e. less than 20 ng/ml. Several studies concludes that there is a high prevalence (60 to 97%) of vitamin D deficiency in tropical & subtropical regions of India and other South Asian countries, though three is abundant sunlight. There are many regions in the India where there is abundant sunlight & consume dairy products in good quality of the people having Vitamin D deficiency.

II. EXPERIMENTATION

From the period of 1st December 2020 to 31st January 2021 – Study was carried out in well equipped pathology laboratory and research centre situated at Nagpur, Maharashtra, India.

With the consent of 200 Healthy people came voluntarily for Vit D3 study – age group 18 to 45 years and living in Nagpur from the birth, education and during job also. Nobody is suffering from any major illness associated with Heart, liver and kidney, central nervous system, thyroid disorders, and Gastrositestinal system problems.

Out of 200 Healthy Volunteers
Doctors – 20 in number
Banking & insurance sectors – 50 in number
Farmers & Employed – 40 in number
House holds – 50 in number
Teachers & students – 60 in number

All volunteers were almost taking nutritious vegetarian and non vegetarian diets like Fish & meat. Somewhere taking milks in the morning hours as a routine.

Their history about sun exposure was almost same like though their working pattern was different.

Blood samples for 25 (OH)D were taken according to volunteers convenience during one month of time. Serum Vit 25 (OH)D was estimated by Radioimmunoassay (RIA procedure)

III. ANALYSIS

If we consider universal interpretation 25 (OH)D value (Vitamin D)

78 % people show <20 ng/ml

10 % - people show between 20 to 29 ng/ml

12 % - people show more than 30 ng/ml

Table – 1 Diagnostic cut offs level of serum vitamin D

Vitamin D Status	25 (OH)D vitamin level in ng/ml
Deficiency	< 20
Insufficiency	21-29
Sufficiency	> 30
Toxicity	> 150

IV. CONCLUSION

This study carried out in Nagpur Maharashtra having abundant sun shine, taking all the volunteer nutritious food. We have to come to the conclusion that it is poor vitamin D status irrespective of age, sex, occupation and geography.

It is very controversial finding that, vitamin D deficiency seen in sunshine sufficient and sunshine deficient regions of India. It is a big question for Indian people though majority of the people are Vitamin D deficient, still it is most under diagnosed and under treated nutritional deficiency in the India.

Considering the environmental conditions, diet habits, easily sunrays exposure, if a scientific committee with permission of related health department take a decision of to lower the cut off values, then automatically the percentage of Indian population's Vitamin D deficiency will come down. Otherwise it is still question why the asymptomatic Indian healthy individuals show high percentage of Vitamin D deficiency.

If we consider, the cut off values < 12 mg/ml, then in the present study only 33 % of people are Vitamin D deficient.

V. CAUSES OF VITAMIN D DEFICIENCY

- 1) Inadequat exposure to sunlight
- 2) Pollution affecting the synthesis of vitamin D in the skin by UV rays.
- 3) Low calcium and low vitamin D containing food intake
- 4) Skin pigmentation.

VI. WHAT IS PROPER WAY TO PREVENT VITAMIN D DEFICIENCY

- 1) If it is lower side of cut off value, according to schedule take the treatment by consulting your doctors.
- 2) Associated problems should be treated with proper medications.
- 3) Daily food products should be fortified with vitamin D by taking consideration the knowledge of expert of nutrition Field. .

4) Health department take it into consideration whether vitamin D deficiency epidemic to be treated at National level and WHO also help for to treat Vitamin D deficiency which is world wide by repeated scientific study, if needed cut off normal values should decreased, because majority of asymptotic patients show low value of vitamin D.

5) Revise Guidelines should be prepared by forming expert team. Vitamin D deficiency in India should be considered Health wise serious issue. Rate of medicines should be decreased, as Vitamin D is costly medicine.

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