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An Etiopathological Study of Vitamin D3 Deficiency with Special Reference to Rasavaha and Asthivaha Srotodushti

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Abstract

As we know, there are different deficiencies of vitamins and minerals due to improper nutrition, improper absorption, or malabsorption so we have to find out exact cause of deficiency of vitamin so it will easy to treat the deficiency. Patients always complain low level of Vitamin D3 in present era. People who are in the exposure of sun also suffering from Vitamin D3 deficiency and the need is to observe dietary phenomenon of Vitamin D3 deficiency patients according to Ayurveda. To observe The Vitamin D3 deficiency symptoms in rasavaha and asthavaha srotodushti lakshane. Vitamin D3 deficiency patients often show the rasavaha and asthivaha srotodushti lakshana so it will be easy to diagnose the early Ayurvedic diagnosis.

Keywords: srotas,vitamin D ,deficiency ,rasavaha srotas lakshane,asthivaha srotas lakshane

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Introduction

Ayurveda is the ancient experiential life science having its own fundamentals and concepts regarding etiopathogenesis of diseases and its management. As we know, there are different deficiencies of vitamins and minerals due to improper nutrition, improper absorption, or malabsorption so we have to find out exact cause of deficiency of vitamin so it will easy to treat the deficiency.

A vitamin is an organic molecule (or related set of molecules) that is an essential micronutrient that an organism need, in small quantities, for the proper functioning of its metabolism vitamins are classified as either.

1. Fat soluble vitamins
2. Water soluble vitamins.

Vitamins

Vitamins A, Vitamins D, Vitamins E, and Vitamins K are fat soluble vitamins.

Vitamins B and Vitamins C are water soluble vitamins.

Fat soluble is absorbed through the intestinal tract and water soluble vitamins dissolved in water and in general, is rapidly excreted from the body to the degree that urinary output is strong predictor of vitamins consumption. Because they are not as rapidly strong, more consistent intake is important.

Vitamins D is important for normal development and maintenance of the skeleton. Vitamin D is Important in this century, life study changes rapidly. Life style and dietary habits are also changing because of this.

Vitamin D is a group of fat soluble vitamin. The body is capable getting its Vitamin D reserves full with 3 full days of sunlight. The best quality of sunlight is end of winter and beginning of summer.

The causes of Vitamin D3 deficiency –

1. Inadequate exposure to sunlight
2. Not enough Vitamin D in your diet
3. Inefficient production in human body.

Functions of Vitamin D3 as follow-

- Supporting bone health by enabling the absorption of calcium
- Promoting muscle heath
- Modulating the immune system
- Aiding cell growth
- Reducing inflammation which helps to prevent diseases such as rheumatoid arthritis and psoriasis
- Regulation of blood Pressure and supporting cardiovascular health.

There are five types of Vitamin D

- Vitamin D1
- Vitamin D2
- Vitamin D3
- Vitamin D4
- Vitamin D5.

However, only two major forms of Vitamin D are D2 and D3

There are many symptoms of Vitamin D3 are related to srotodushti according to Ayurveda.

Srotas are channels of circulation by Ayurvedic classics proclaim.

Srotomayam hi shariram

Means that living body is a channel system and is comprised of innumerable channels which are designed as inner transport system for divergent function grace and subtle biological and energetic. The word Srotas derived from Sanskrit root sru gatau

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(sru+tasi = strotas) which means moving, filtering, flowing, leaking, secreting, etc. There are 14 major strotas according to Ayurveda. Vitamin D3 and lakshan of rasvaha and asthivaha strotas are mostly same so the observation of Rasvaha and Asthivaha srotas lakshan with vitamin D3 is important.

Assessment Criteria

Assessment method

Clinical assessment will be done according to symptoms of Vitamin D3 deficiency mentioned in classical texts.

Rasavaha Srotodushti Lakshane
Ashraddha (Aversion towards food)
Aruchi (Loss of taste)
Aasya vairyasam (Change of taste)
Hrullas (Nausea)
Arsagyata (Loss of taste)
Gauravam (Stiffness in body)
Angamard (Body ache)
Tandra (Drowsiness)
Tamaha (Fainting)
Jwara (Fever)
Pandutvam (Pallor)
Strotasamrodha (Systemic obstruction)
Klaibyam (Impotence)
Saada (Easy fatigability)
Krish angta (Wasting)
Nasho agnehe (Anorexia)
Ayatha kalam walay (Untimely wrinkles)
Ayatha kalam palitani (Untimely baldness)

Assessment Criteria

These criteria are as follows:

Vitamin D3 deficiency symptoms
Fatigue
Tiredness
Back pain
Depression
Impaired wound
Bone loss
Hair loss
Muscle pain
Light headness
Muscle aches
Weakness

Asthivaha Srotodushti Lakshane
Adhi asthi (extra bones)
Adhi dantau (extra tooth)
Asthi bhedam shulam (arthralgia)
Dant shulam (dental pain)
Vivarnata (discoloration)
Kesh dosha (hair disorder)
Nakh dosha (nail problems)

Methodology

- Literary review:

The literature regarding the topics studied from the relevant compendia of Ayurveda and modern science.

- Data collection:
- Source: 100 participants were selected from our research center

Informed consent was obtained from all the subjects. Subject who given consent was enrolled in the study and scrutinized as per the inclusion criteria.

Clinical examination was performed and assessment was done by Nidan Panchak.

The data were recorded in the case record form and will be analyzed. Conclusion was drawn on the basis of data obtained.

Results

If $P < 0.05$, the level of significance; the null hypothesis is rejected.

Since $P < 0.05$ for all lakshanas/hetu except Fatigue, Tiredness, Backpain, Hairloss, Angmard, Panduta, Keshdosha, Asthitod, low intake of milk, low intake of mushrooms, ati chintan; the null hypothesis can be rejected for all these lakshanas/hetu except fatigue, tiredness, backpain, hairloss, Angmard, Panduta, Keshdosha, Asthitod, low intake of milk, low intake of mushrooms, and ati chintan.

Conclusion

The proportion of patients with fatigue, tiredness, backpain, hairloss, Angmard, Panduta, Keshdosha, Asthitod, low intake of milk, low intake of mushrooms, and ati chintan is not significant.

The proportion of patients with all remaining listed lakshanas/hetu is sign

1. According to the age factor, 40–50 year had a risk of getting deficient because of Vitamin D as compare to the other age group
2. Based on gender, it was observed that female patient of Vitamin D3 deficiency is more affected than male patients
3. Prakruti Parikshan-wise observed that vataj pittanubandhi prakruti is seen 50% pittaj kapha prakruti 32% and vataj kapha prakruti patients are 11% so vataj pittanubandhi patients are oftenly seen
4. Based on lakshana from the total patients of Vitamin D3 deficiency, 92% of patients are suffering from asthidushti lakshana and 83% of patients are suffering from rasavaha srotas dushti lakshana
5. It was observed that compared to mixed diet (35%), people with strict vegetarian diet are more prone for Vitamin D3 deficiency, that is, 65%.
6. According to Vitamin D deficiency level, 24% of patients are mild deficient, 37% of patients are moderate deficient, and 39% of patients are severe deficient
7. From the symptoms of Vitamin D deficiency, 64% of patients shown muscle pain, 54% of patients shown hairfall, 53% of patients shown hairloss, 53% ofg patients shown tiredness, patients shown backpain, 44% of patients shown fatigue, and 19% of patients are suffering from depression
8. Based on Viharaj Hetu study, the people who were having stressful lifestyle were more prone to get Vitamin D3 deficiency.
9. About 83% of patients rasavaha srotodushti Angamard symptom present in 51 patients, Walay present in 32 patients, Palitya present in 32, and ashraddha present in 31 patients, Aruchi lakshana present in 21 patients, and Hrullas lakshan present in 26 patients

   Gaurav seen in 25 patients and tandra seen in 20 patients; Jwara lakshan seen 34 patients are krishangata in 25 patients
10. About 92% of people are seen affected by asthidushti lakshana Asthitod lakshana seen in 49 patients, Dantbhed seen in 17 patients, and Dantshool seen in 13 patients. Dant vaivarnyata seen in 16 patients, Keshdosha seen in 50 patients,

and Nakhadosha seen in 17 patients

11. According to diet, 70 people are of mixed diet, 20 people are vegetarian, and 10 people are non-vegetarian
12. According to aharaj hetu, low intake of milk seen in 49 people, low intake of cheese seen in 32people, low intake of mushrooms seen in 46 people, and low intake of non-veg seen in 28 people
13. Low intake of butter seen in17 people and 14 people take Atiguru Ashna
14. 14 people take Ati Snigdha Ashna and 14 people take Atisheet Ashna
15. According to viharaj hetu, 81 people affected because inadequate exposure of sunlight 15 people are ati nidrit Ati chintan seen in 52 patients Ati manachar seen in 16 people
16. When we compared lakshana of asthivaha and rasavaha srtodushti with Vitamin D3 deficiency symptoms with Chi-square statistical test, *P*-value was derived each lakshana and symptom of Vitamin D deficiency, $P < 0.05$ is considered as significant dant bhed, nakhadosha, ashradhha, asya vairasya, Gaurav, tandra jwara, klaibya, and ayatha walaya were having less *P*-value but they did not match with symptoms of Vitamin D3 which means there is no similarity between the above symptoms of Vitamin D3 rasavaha and asthivaha srotodushti lakshana.

In other word dantshool, athitod, vaivarnyata, keshdosha aruchi hrullas Gaurav, tandra angmard, tamah, and palitya, these symptoms have $P < 0.05$ so it denotes that there is a correlation between Vitamin D3 and Rasavaha, asthivaha srotodushti lakshanas, and also this symptoms match with Vitamin D3 symptoms; hence, it is proved that there is a correlation between symptoms of asthivaha srotodushti andrasavaha srotodushti.

As per my study Vitamin D3 deficiencies patient and we compared symptom rasavaha srotodushti lakshane and Annavaha srotodushti lakshane. From these observations, we concluded that, there are in many symptoms of Vitamin D3 deficiency associated with rasavaha srotodushti lakshane and Asthivaha srotodushti lakshane from observation of Vitamin D3 deficiencies patient from our study that there is connection in causes of Vitamin D3 deficiency and rasavaha srotodushti hetu and asthivaha srotodushtihetu in many patients.

We concluded from our observation that, hairfall is common factor for Rasavaha srotodushti and Annavaha srotodushti. Most of Vitamin D3 deficient patients show hairfall.

Furthermore, from our observational study, we concluded that Atichintanat is themost common viharaj hetu in Vitamin D3 deficiency patients and sedentary type of work has adverse influence on development of Vitamin D3 deficiency.

We concluded that there is role of Aharaj and viharaj hetu in etiopathogenesis of Vitamin D3 deficiency.

We also concluded that Asthivaha and Rasavaha Srotodushti have prominent role in causation of Vitamin D3 deficiency than other types of srotodushti. Despite of majjavaha srotodushti, it is third common srotodushti in Vitamin D3 deficiency patients.

Vitamin D3 deficiency is present more in reproductive and perimenopausal age group females due to increased physiological demand.

People with strict vegetarian diet are more prone to develop Vitamin D3 deficiency.

People with non-vegetarian diet get Vitamin D3 deficiency mainly because of malabsorption in gastrointestinal tract and agnimandya keshapatan (hairfall), sandhishool (jointpain), Pandutvam (Pallor), daurbalya (fatigue), and Nasho agnehe (Anorexia) were strongly associated with symptoms of Vitamin D3 deficiency.

Atisnigdha Ashnatam (Excessive oily diet) and Atiguru ashna (excessive hot meal) are most common Aharaj hetu present in Vitamin D3 deficiency.

Above hetus are common factors in newer lifestyle changes especially food habits of junk/oily food and high pressure job. Moreover, inadequate exposure of sunlight is also main cause. Therefore, lifestyle modification is one of best way to prevent Vitamin D3 deficiency.

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