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Research Article

**VITAMIN-D DEFICIENCY AMONG PATIENTS PRESENTING
IN OUTDOOR DEPARTMENT**¹Dr. Ayesha Sarwar, ²Dr. Imran Tahir, ³Dr. Sameen Tahir¹Lahore General Hospital Lahore, ²Ghurki Trust Teaching Hospital Lahore, ³Lahore General Hospital Lahore.**Article Received:** October 2019 **Accepted:** November 2019 **Published:** December 2019**Abstract:**

Background: Vitamin D has an important role in immunity, skeletal and cardiovascular system. It is produced through skin chemical reaction as well as taken through supplementations. Objective: To see the prevalence of vitamin D deficiency in patients presenting in the outdoor department. Material and Methods: In this cross-sectional study 100 patients between 20 to 50 years of age were included. Vitamin D levels of the patients were checked. Data were analyzed using SPSS 23. Results: Study included 45 (45%) males and 60 (60%) females. Mean value of vitamin D levels were 33.42 ± 13.62 nmol/L. In males its values were 33.41 ± 14.21 nmol/L and in females 32.89 ± 13.22 nmol/L. Twenty (20%) of the patients had adequate vitamin D levels, 35 (35%) had intermediate levels and 45 (45%) had lower than normal levels. Conclusion: It is concluded that a proper diet and proper sun exposure are necessary for normal vitamin D levels. Vitamin D supplementations can help in patients suffering the Vitamin D deficiency.

Keywords: Vitamin D levels, sunlight, diet, supplementations, pregnancy.**Corresponding author:****Dr. Ayesha Sarwar,**

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INTRODUCTION:

Vitamin D is a lipid-soluble vitamin and has two major forms i.e. cholecalciferol (vitamin D3) and ergocalciferol (vitamin D2) [1, 2]. It has an important role in the skeletal, cardiovascular and immune health system. It also plays a significant role in mineral metabolism. It increases absorption of phosphate, calcium, and magnesium through the intestine [3]. Among the sources of vitamin D is its production in the skin through a chemical reaction. This chemical reaction is highly dependent on exposure to sunlight [4]. Vitamin D is also taken through dietary supplementations. The serum level of 25(OH) Cholecalciferol, vitamin D (D3) greater than 50 nmol/L is considered normal. Levels less than 30nmol/L are considered deficient and level between 30 nmol/L and 50 nmol/L are considered optimal [5].

Currently, around one billion population is suffering from its deficiency [6]. In developing countries like Pakistan, vitamin D deficiency is more common because of poverty, improper diet, and decreased intake of calcium and deprivation of sunlight because of confinement in dark places [7]. Vitamin D deficiency causes rickets in children and osteoporosis and osteomalacia among adults. It also predisposes to the certain type of carcinomas i.e. mammary carcinomas, prostatic carcinomas, ovarian as well as colon carcinomas, etc. [8]

This study was conducted in Lahore General Hospital to see the prevalence of vitamin D deficiency among the patients with presenting in the outdoor department.

MATERIAL AND METHODS:

This cross-sectional study was conducted in the outdoor department of Lahore General Hospital Lahore for a period of one month. Total of 100 patients between 20 to 50 years of age were included. Patients presenting with chronic diseases i.e. joint pains, hypertension, diabetes mellitus, and tuberculosis were included. Pregnant and lactating females were also included. Patients less than 20 and more than 50 were excluded. Patients presenting with minor ailments i.e. flu, mild fever, and respiratory tract infection were not included. After informed consent, proper history of patients including demographic history i.e. age, gender, dietary routine was taken. Vitamin D was checked. Data were analyzed using SPSS version 23. Quantitative variables were presented as mean and standard deviation. Qualitative variables were calculated as numbers and percentages.

RESULTS:

Total 100 patients were included in the study, with 45 (45%) males and 60 (60%) females. Male to female ratio was 1:1.33. Mean age of the patients was 32.98 ± 6.99 years, mean age of the males and females was 33.12 ± 7.99 and 34.99 ± 6.87 years respectively. Twenty percent of the patients presented with history of joint pain, 25% with hypertension, 18% with diabetes, 10% with tuberculosis and 27% of the patients were pregnant and lactating females.

In 100 patients mean value of vitamin D levels were 33.42 ± 13.62 nmol/L. In males its values were 33.41 ± 14.21 nmol/L and in females 32.89 ± 13.22 nmol/L. Maximum levels noted were 59.32 nmol/L and minimum levels noted were 14.29 nmol/L. Twenty (20%) of the patients had adequate vitamin D levels, 35 (35%) had intermediate levels and 45 (45%) had lower than normal levels. Considering the dietary routine, patients with a low income had an improper meal 1 to 2 times a day, patients with average and good income were having a proper diet and patients who were not working at all were 21 (21%) and 18 (18%) were having proper and improper diet respectively.

DISCUSSION:

In this study it was seen the vitamin D levels were normal in patients with proper diet and having a greater exposure to sun light and optimal or deficient in patients with improper diet and not having proper exposure to the sunlight. In our study mean value of vitamin D levels were 33.42 ± 13.62 nmol/L. In males its values were 33.41 ± 14.21 nmol/L and in females 32.89 ± 13.22 nmol/L. These results are according a study conducted by Gordon et al, who conducted study on health individuals [9]. In pregnant and lactating females variable levels of vitamin D were noticed depending on proper diet and exposure to the sunlight. These results are in accordance with Hollis et al. [10].

In various studies it has been suggested that vitamin D supplementation can help improving the vitamin D levels in patients of different age [11]. However use of multivitamin were unable to cope the deficiency of vitamin D levels. According to the IOM (Institute of Medicine) 2011 report, daily requirement of vitamin intake is 600IU/day. However debate is going to increase the daily intake up to 800-1000IU/day for those individuals who are living in dark places [12-14].

LIMITATIONS:

Small number of patients and exclusion of pediatric patients and patients greater than 50 years of age are few limitations to this study.

CONCLUSION:

It is concluded that, in population of Pakistan, there is high prevalence of vitamin D deficiency. So, it is recommended to ensure the proper diet, sun exposure and vitamin D supplementation to the individuals suffering from vitamin D deficiency.

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