Original Article

FREQUENCY OF VITAMIN D DEFICIENCY IN PATIENTS WITH BACKACHE IN GENERAL POPULATION

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ABSTRACT:

OBJECTIVE: To determine frequency of vitamin D deficiency in patients with backache in general population and to compare the result with international studies.

STUDY DESIGN: Cross sectional Descriptive Case Series.

PLACE AND DURATION: Outdoor patients of Medicine Department, Allied Hospital, Faisalabad, from 01-07-2016 to 31-12 -2016.

MATERIALS AND METHODS: Adult patients of either gender with backache were included in the study. Patients of chronic renal failures, known rickets, osteomalacia and malabsorption were excluded. Non-probability consecutive sampling technique was used. After enrolment of patients according to criterion an informed consent was taken. Serum vitamin D 30ng/ml to 100ng/ml was taken as normal.

RESULTS: Total number of patients were 100. Age ranged from 12-74 years (mean =36.72).
Out of these 55% had suboptimal vitamin D levels (cut off value= 30ng/ml) of Which 67.27% were female and 32.73% were male having hypovitaminosis (P value = 0.946).
Out of 100 patients 60% were below age 40 and 40% were above 40 and out of these 58.2% patients with vitamin D deficiency were below 40 years and 41.8% patients were above 40 years. (P = 0.682)

CONCLUSION: Vitamin D deficiency is common in Pakistani population and needs to be considered in all patients with backache so that early supplementation of vitamin D can be done to improve health of our community.

KEY WORDS: backache, hypovitaminosis D, community

INTRODUCTION:

Low Backache is a common problem in our society. In many of these patients cause may be taken as idiopathic. Sub optimal Vitamin D levels may serve as a valid cause. Irrespective of sufficient sun exposure our people experience frequent backaches, and we lack this data in our country. To make the bones strong, to avoid backache, Vitamin D, calcium and phosphorus are necessary. Vitamin D deficiency is an established risk factor for osteopenia and bone fractures.[1]

Hypovitaminosis D is common in medical patients, even in those patients without

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apparent risk factors.[2] It has been estimated that 1 billion people worldwide have vitamin D deficiency or insufficiency.[3] Multiple studies estimated the prevalence of hypovitaminosis D in selected populations are at particular risk for vitamin D deficiency. A multicenter trial in patients over 65 is showing vitamin D deficiency ranging from 25 % to 54%, other study showing 57% vitamin D deficiency.

We conducted this study in our community to look for vitamin D deficiency in general patient so that we can replace vitamin D in general population to improve health of our society.

MATERIALS AND METHODS:

Either gender adult patients of backache were included. Study was conducted in outdoor of Medicine Department, Allied Hospital, Faisalabad over a period of 6 months from 01 July, 2016 to 31 December, 2016. Non probability consecutive sampling technique was used. Patients of Malabsorption syndromes, renal disease, rickets and osteomalacia were excluded from this study.

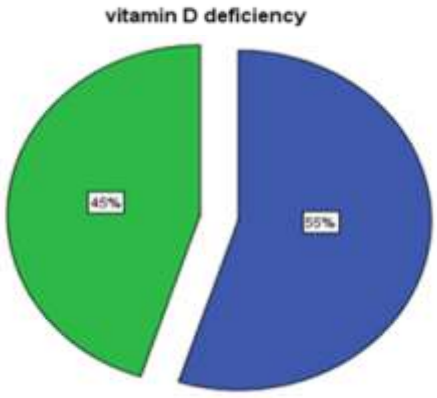
There is no conflict of interest and no ethical issue was involved.

After selection of patients per criterion, informed consent was taken. Brief history regarding demographic details and backache, observation was taken and a thorough examination was conducted. Patient's laboratory investigations, Vitamin D levels were done. In this study we took normal value of vitamin D as 30 ng/ml. After the data collection was accomplished, results were analyzed by SPSS version 16.

RESULTS:

Total number of patients was 100. There were 67 females and 33 males. Age of patients ranged from 12-74 years (mean = 36.7years). Fifty five percent had deficiency of vitamin D (below 30 ng/ml) amongst which 67.27% were female and 32.73% were males (P = 0.949).

Out of 100 patients 60% were below age 40 years and 40% were above age 40 and out of these 58.2% patients with vitamin D deficiency were below 40 years and 41.8% patients were above 40 years with vitamin D deficiency. (P = 0.682)



Normal Patients= 45%
Vitamin D Deficiency patients =55%

Table 01. Age meanvalues

	n	Minimum	Maximum	Mean	Std. Deviation
Age	100	12	76	36.72	15.387
Results	100	13.3	86.5	32.271	15.7821

Table 02. age distribution

	Frequency	Percent
= 40 years	60	60.0
> 40 years	40	40.0
Total	100	100.0

Table 03. Gender

	Frequency	Percent
Male	33	33.0
Female	67	67.0
Total	100	100.0

Table 04. vitamin D deficiency

	Frequency	Percent
yes	55	55.0
no	45	45.0
Total	100	100.0

Table 05. Distribution of patients according to age

		Age		Total
		= 40 years	> 40 years	
vitamin D deficiency	yes	32 58.2%	23 41.8%	55
	no	28 62.2%	17 37.8%	45
Total		60	40	100

Chi-Square Tests

	Value	p-value
Pearson Chi-Square	.168	.682

Table 06. Distribution of patients according to gender

		Gender		Total
		Male	Female	
vitamin D deficiency	yes	18 54.5%	37 55.2%	55
	no	15 45.5%	30 44.8%	45
Total		33	67	100

Chi-Square Tests

	Value	p-value
Pearson Chi-Square	.004	.949

DISCUSSION:

Low back pain (LBP) is a common health problem with concomitant disability which has assumed a public health importance in our setting. This study demonstrated to have an association of vitamin D deficiency with backache. These results are consistent with previous reports regarding an increased prevalence of backache with hypovitaminosis.[1,2,3,4,5,6,7]

Significant association was shown between age and backache. According to several studies 40 to 100 % of US elderly men and women are having vitamin D deficiency.[15]

Female are at high risk for deficiency .especially age group below 40 years.

Shajee Ahmed and colleagues conducted study in PIMS Islamabad Pakistan on 243 patient with mean age 26.7 years. Vitamin D deficiency was found in 81% of patients of which 83.3 % were females and 16.7 % were males which almost comparable to our study showing 67.2% females and 32.7 % males with hypovitaminosis.[5] Difference between 81% and 67.2% may be due to that in Shajee study

more female 83.3 % were enrolled as compare to our female 67% that may be reason for more 81% of patients with hypovitaminosis.

In another study by Behzad Haidari and Yahiya Javadianin Rouhani Hospital Babole University of Medical Sciences Iran on 81 female patients with low backache, mean age was 35.1±8.14 years. This study showing hypovitaminosis in 70.4% of patient which is almost similar to our study finding of 67.4% females patients with vitamin D deficiency with backache.[4]

In another study in European journal of preventive medicine also showed strong association of vitamin D deficiency and backache and this study was conducted in Benha University Benha Egypt in 174 patients in females of child bearing age in Egypt favoring our study findings.[1]

In other study by Babita Ghai, Dipika Bansal, Gudala Kapil and colleagues was conducted in India at Chandigarh on 328 patients with chronic backache. Mean age of study population was 43.8 years. Out of 328 patients 86% were found to be deficient in vitamin D. Although there is difference in 86% and 55% of patients with vitamin D deficiency but both these studies showing strong association of backache and vitamin D and difference between 86% and 55% may be due to regional and geographical reason.[2]

As in different studies conducted in USA 40% to 100% elderly men and women are vitamin D deficient, that is why difference studies in different populations have wide range of variation from 40% to 100% validating both these studies showing 55% and 86% hypovitaminosis.

In another study conducted at Karachi Steel Mills Hospital on orthopedic patients with backpack by Naila azam and Asghar javed awan in 2008 -2009 on 89 patients with backache. Seventy three were females and 16 were males with mean age 40.2years ±10.75 This study showing vitamin D deficiency in 75 % of patients which is comparable to our study validating our findings.

CONCLUSION:

We can conclude that among Pakistani population especially females, backache is strongly associated with vitamin D deficiency. It should be considered in all patient with backache and early detection of deficiency of vitamin D should be done so that we supplement these patient as early as possible to improve the quality of life these patients and to improve the General health of Pakistani community

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PATIENCE IS OF TWO KINDS: PATIENCE OVER WHAT PAINS YOU, AND PATIENCE AGAINST WHAT YOU COVET

Hazrat Ali (Karmulha Wajhay)