

**ROLE OF VIT D DEFICIENCY IN WOMEN WITH FIBROMYALGIA****Dr. Kalpana Singh, Dr. Anjali Rani\*, Dr. Mamta, Dr. Nisha Rani Agarwal**

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Author  
Dr. Kalpana Singh  
India.****ABSTRACT**

Fibromyalgia is affecting muscles and ligaments causing severe pain. It has been seen that Vit D deficiency is common in patients with chronic pain and fibromyalgia. In this study 60 patients of fibromyalgia were given supplementation of Vitamin D. Supplementation of Vit D (60000 WEEKLY for 8 weeks) has caused great improvement in reducing pain in fibromyalgia patients. In control group placebo was given. There are so many studies which has shown a relation between fibromyalgia and low vitamin D level. Our aim of this study was to

see is there any correlation between Vitamin D level and fibromyalgia. Female patients having fibromyalgia suffered from dyspareunia also. This affects their quality of life.

**KEY WORDS:** Vitamin D, Fibromyalgia.**INTRODUCTION**

Fibromyalgia is a chronic painful condition affecting muscles and ligaments. Mostly females are affected in their late thirties and fifties. It presents with persistent wide spread pain, stiffness, fatigue, disrupted unrefreshing sleep, cognitive difficulties, anxiety and depression and functional impairment of daily living activities.

According to American college of Rheumatology, New Clinical Diagnostic Criteria for fibromyalgia includes wide spread pain index (WPI), a measure of the number of painful body regions and another is symptom severity scale (SS), which includes cognitive symptoms, unrefreshing sleep, fatigue and somatic symptoms. Thus WPI and SS scale recommended a new case definition of fibromyalgia (WPI  $\geq$  7 AND SS  $\geq$ 5) OR (WPI 3-6 AND SS  $\geq$ 9 ).<sup>[1]</sup> Fibromyalgia diagnostic criteria shown below Fibromyalgia diagnostic criteria.

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|---|
| 1. Preliminary diagnostic criteria widespread pain index (WPI > 7) and symptom severity (SS) scale score > or WPI (3-6) and SS scale score > 9. |
| 2. Symptoms present at a similar level for at least 3 months.   |
| 3. Patients does not have a disorder that would otherwise explain the pain.   |

Many studies done at different part of the world to establish a correlation between deficiency of vitamin D level and fibromyalgia symptoms. Cholecalciferol is the active form of the vitamin D, synthesized in the skin, under the effect of sunlight. Few studies shows positive correlation between vitamin D and symptoms of fibromyalgia.<sup>[2]</sup> and few shows no role.<sup>[3]</sup>

Vitamin D receptors are present on muscles, and patient showing low serum vitamin D levels, after giving therapy showed significant improvement in their symptoms.

### MATERIALS AND METHODS

This study was conducted at Obstetrics and Gynecology Department, in the duration of January to May 2014, IMS BHU on O.P.D basis. A questionnaire was made with following points

1. Age
2. parity
3. Level of physical activity
4. Duration of pain and frequency
5. Distribution of tender points (widespread pain)
6. Use of pain relieving drugs and physiotherapy

Sixty female patients diagnosed as having fibromyalgia according to new clinical criteria. Inclusion and exclusion criteria used for patient selection.

### Inclusion criteria

Age 20- 60yrs.
25 hydroxy vitamin D level < 50nmol/l
Chronic recurrent musculoskeletal pain (>3 episodes of > 1 month pain in 2 years) or long lasting pain (>3 months).
Non specific pain (no obvious cause such as arthritis , lumbar disc herniation, trauma)

### Exclusion criteria

Pregnancy
Signs of rickets
Use of vitamin D in the last 4 months
Erythrocyte sedimentation rate >30mm/h
Use of Cyclosporins or oral steroids.
Hyper-calcemia (calcium level >2.55mmol/l)
Sarcoidosis , tuberculosis
Creatinine level >150mmol/l

Patients having specific diagnosis excluded from study. Baseline serum vitamin D levels along with serum  $Ca^{++}$  and  $PO_4^-$  levels done. Vitamin D deficiency is arbitrarily defined as < 50nmol/l serum level and patients are categorized mild to moderate deficient and severely deficient.

60000IU of vitamin D per weekly for 8 wks given and follow up done. After 2 months of therapy serum levels of vitamin d repeated and clinical correlation between fibromyalgia symptoms done.

### Observations

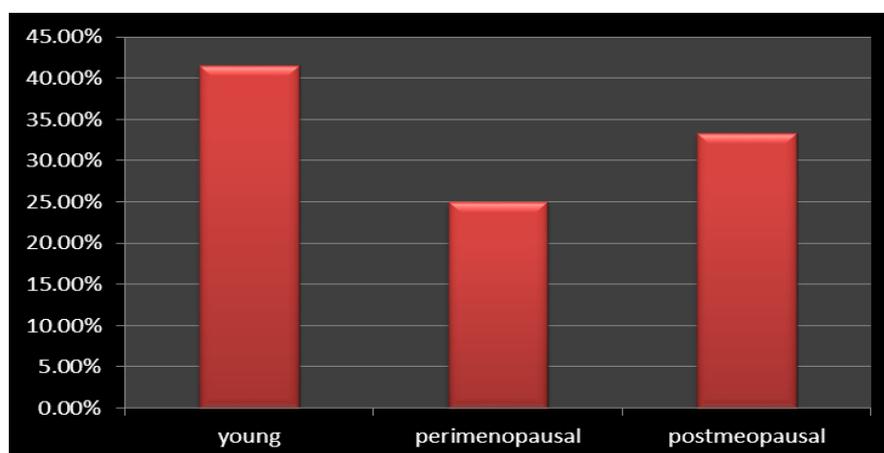
Among sixty patients diagnosed fibromyalgia were between age group of 20 to 60 years, thus affecting almost all age groups. Young patients are 25 (41.6%).

**Table 1. (Age wise distribution)**

**Table 1 shows age wise distribution.41.6% were less than 40 years of age. Thirty three percent patients were above 50 years of age.**

Young	Perimenopausal	Postmenopausal
<40 yrs	40-50 yrs	>50 yrs
25	15	20
41.6%	25%	33.3%

(n)=60.

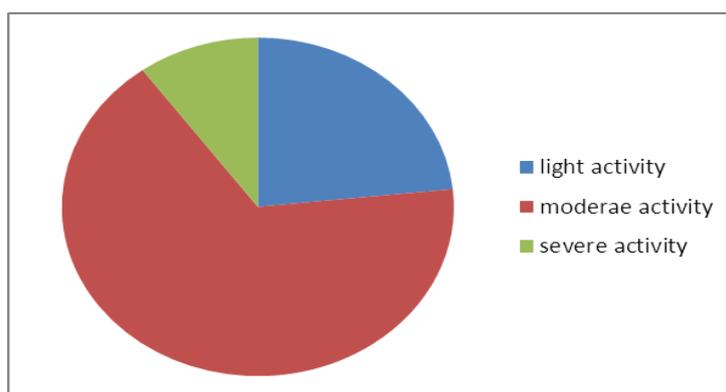


**Table 2. (Level of Physical Activity)**

Light worker	Moderate worker	Heavy worker
14	40	6
23.3%	66.6%	10%

(n)=60.

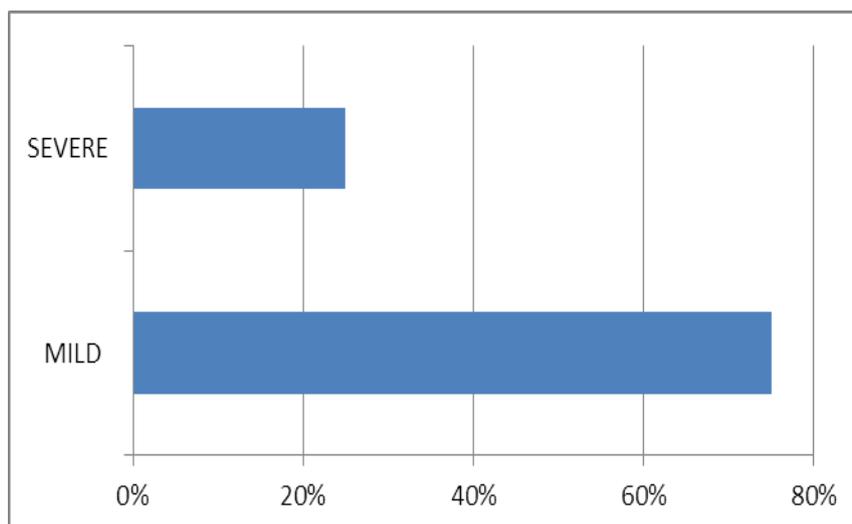
These patients are divided according to level of activity among light, moderate and heavy workers. 66.6% patients were moderate workers while only 10 % patients were heavy worker.



Out of 60 patients, 52 showed (86.6%) low serum vitamin D deficiency. They were divided into mild to moderate deficiency and severely deficient patients. Patients having serum levels between 10- 25 ng/ml categorized mild to moderately deficient and serum levels below <10 ng/ml severely deficient as shown in table 3. Almost all the patients are using pain killers, some are very frequently and some are irregularly. Few patients are taking help of physiotherapy.

**Table 3.(Vitamin D levels).**

Mild to moderate deficiency ( 10- 25 ng/ml)	Severe deficiency ( < 10 ng/ml)
45	15
75%	25%



These patients having deficiency 60000 IU of vitamin D per weekly for two months given and advised to come for follow up in the opd. Among 52 patients only 44 (84.6%) reported and 8 (1.53%) did not turn up. In these 44 patients we repeated their vitamin d levels and clinical correlation with fibromyalgia symptoms done. These patients showed increase in their vitamin D levels and a good number of patients showed improvement in their pain and disability.

**Table 4 (Symptomatic improvement).**

Symptomatic improvement	No relief
32(72.7%)	12(27.27%)

(n)=44.

Few patients showed 12 (27.27%) no clinical improvement. All patients showing normal values of serum  $ca^{++}$  and  $po4^{-}$  levels.

## DISCUSSION

Vitamin D3 is a fat soluble vitamin synthesized inside body, is playing very important role in other health problems like osteoporosis, diabetes mellitus, coronary artery disease, cancers and PCOS. Worldwide studies are going to establish a definite correlation of deficiency of vitamin d<sub>3</sub> and fibromyalgia symptoms. Our study is showing clinical improvement among 72.7% patients and age group affected mainly below 40 yrs (n=40, 41.6%), results are similar to Badsha H et al.<sup>[2]</sup> 90% clinical improvement and age group affected around 40 yrs. Study done by Matthana MH<sup>3</sup>et al showed 61% females were involved, similar to our study 84.6% females affected.

Abokrysha NT.<sup>[4]</sup> showed 100% clinical improvement in their female patients, results are close to our study (72.7%). Establishing the role of vitamin D deficiency in impaired neuromuscular functioning and nonspecific muscular pain, Sakalli H.<sup>[5]</sup> et al did study and showed megadosage of vitamin D improves quality of life and decreases pain, this is similar to our study establishing symptomatic relief in fibromyalgia.

Ferdinand Schreuder MD.<sup>[6]</sup> et al also established, high dose vitamin D<sub>3</sub> on nonspecific persistent musculoskeletal complaints showed improvement in their symptoms, similar to our study. Szabo A.<sup>[7]</sup> in their study showed vitamin D plays significant role in skeletal and nonskeletal health. Deficiency of it may cause growth retardation and bony deformities. Wepner F.<sup>[8]</sup> et al. also correlated symptoms of fibromyalgia with the vitamin D levels in their study like our study. Along with the pain improvement, it has role in depressive illness, anxiety and other somatic symptoms.

Another study by David S Arnold MD.<sup>[9]</sup> et al showed mild short term improvement in overall fibromyalgia symptoms but did not show significant improvement or in activity of daily life. This is similar to our study as few patients 12 (27.27%) did not show any improvement. Macfarlane GJ.<sup>[10]</sup> et al in their study shown an excess of widespread pain in correlation of low levels of vitamin D, similar to study by us. How the vitamin D affects bone health in all age group from children, to reproductive age group females, postmenopausal and older ones, this is well correlated in the two studies done at different time by Cranney A.<sup>[11]</sup> et al (2007) and by the same group in 2008 Cranney.<sup>[12]</sup> et al they established an evidence based review on vitamin D efficacy and safety in relation to bone health.

In different part of the world, lots of researches and trials are going to know, how vital is the role of vitamin D in bone health, fibromyalgia, cardiovascular diseases, cancers and autoimmune disorders.

## CONCLUSION

We came to know by this study almost all the age groups from young to old may have deficiency of vitamin D<sub>3</sub>. Cause of this widespread deficiency is probably due to restricted outdoor activities, less exposure to sunlight use of sunscreens and dietary factors. By improving dietary habit, milk, oat fish and eggs can maintain normal vitamin D level.

Fortification of food supplements with vitamin d and exposure to sunlight regularly for 15-20 minutes can prevent the deficiency.

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