

An Observational Study for Association of Vitamin-D Level and Prostatomegaly Grades in Benign Prostate Hyperplasia Patients**Rajnish Gautam¹, Aditi Ranawat², Mamta³, S S Yadav⁴, Sandhya Mishra⁵**¹Postgraduate Student, Department of Biochemistry, SMS Medical College, Jaipur²Assistant Professor, Department of Biochemistry, SMS Medical College, Jaipur³Sr. Demonstrator, Department of Biochemistry, SMS Medical College, Jaipur⁴Sr. Professor and HOD, Department of Urology, SMS Medical College, Jaipur⁵Sr. Professor and HOD, Department of Biochemistry, SMS Medical College, Jaipur

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Conflict of interest: Nil

Abstract:**Introduction:** Benign prostatic enlargement is one of the most prevalent ageing related derangements in men and has significant impact on quality of life. This study was designed to find the association of Vitamin-D levels and prostatomegaly grade in patients of BPH.**Material and Methods:** After Ethical Committee approval, blood sample was collected from 60 BPH patients. Vitamin-D level was measured by Chemiluminescence method in fully automated Advia-centaur analyser. Results were analysed in relation to the prostatomegaly grades in patients of BPH using student's 't' test. Vitamin-D level < 20 ng/ml was considered deficient.**Result:** Serum Vitamin D level was less in patients with Grade 3 prostatomegaly (16.65 ± 2.914) than patients with Grade 1 (20.438 ± 3.785) and Grade 2 (19.645 ± 3.853) prostatomegaly and found statistically significant.**Conclusion:** Our study showed significantly lower levels of Vitamin-D (p value <0.001) with higher prostatomegaly grade in males with BPH. Thus Vitamin-D levels may have a significant role in the etiopathogenesis of BPH & severity of symptoms. Vitamin D deficiency may be used as a therapeutic target for preventing and treating BPH.**Keywords:** Vitamin-D, BPH, Prostatomegaly.This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.**Introduction**

Benign Prostatic Hyperplasia (BPH) is one of the most prevalent ageing-related derangements in men and has a significant impact on quality of life [1]. Prevalence of BPH ranges from 40-50% at the age of 50 years, 80% at the age of 70 years and about 90% by the ninth decade [2]. Normal, as well as malignant prostate cells, express vitamin-D receptors [3], which are responsible for regulating cell growth and replication [4]. Consequently vitamin-D deficiency could potentially be a modifiable risk factor for the prevention of BPH in addition to other risk factors like obesity, diabetes mellitus, diet and lifestyle [5].

This study was designed to find the association of Vitamin-D level and prostatomegaly grades in patients of BPH.

Aim: To study the association of Prostatomegaly grade with Vitamin-D deficiency in patient with BPH

Objective: To determine the correlation of vitamin-D level with Prostatomegaly grade in patient with BPH.

Methodology**Necessary permissions will be taken from-**

- The Ethical Committee.
- Research Review Board.
- Department of Urology, SMS Medical college, Jaipur.

Place of Study: Central Lab, Department of Biochemistry & Department of Urology, SMS Medical College & attached hospitals, Jaipur.

Study Type: Hospital based observational study

Inclusion Criteria

- Men aged more than 50 years
- Presenting with Benign prostate hyperplasia
- PSA < 4 ng/ml
- Willing to participate in the study by giving a written informed consent.

Exclusion Criteria

- Patients with a history of
 - Neurogenic bladder
 - Stricture urethra
 - Carcinoma of bladder or prostate
 - Vesicle calculi
- Serum PSA level > 4 ng/ml
- Age less than 50 years
- Patient not willing to take part

Procedural Steps

- After Ethical Committee approval, blood sample was collected from 60 BPH patients.

- Vitamin-D level was measured by Chemiluminescence method in fully automated Advia-centaur analyser.
- Results were analysed in relation to the prostatomegaly grades in patients of BPH using students't' test.
- Vitamin-D level < 20 ng/ml was considered deficient.

Observation and Results: The mean age of male participants was 64.31 ± 11.39 years. Binary logistic regression analysis showed a strong association between vitamin-D deficiency in men with BPH.

Table 1:

Prostatomegaly Grade	Vitamin-D Level (ng/ml) (Mean ± SD)
I (n = 26)	20.43 ± 3.78
II (n = 20)	19.64 ± 3.85
III (n = 14)	16.65 ± 2.91

As shown in the above table, Serum Vitamin D level was less in patients with Grade 3 prostatomegaly (16.65 ± 2.91) than patients with Grade 1 (20.43 ± 3.78) and Grade 2 (19.64 ± 3.85) prostatomegaly.

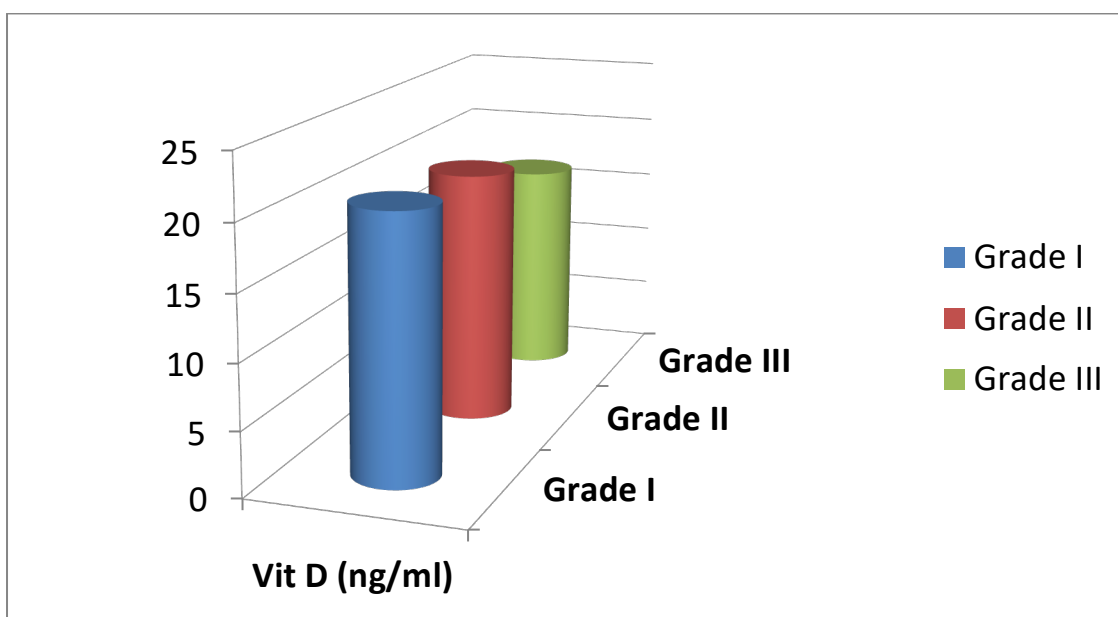


Figure 1:

Table 2:

Prostatomegaly Grades	Grade I v/s II	Grade II v/s III	Grade I v/s III	Grade I + II v/s III
t-value	1.5804	1.634	3.254	3.088
Two Tailed P-value	0.121	0.111	0.002	0.003
Statistically significance	Not significant	Not significant	Very significant	Very Significant

Conclusion

Our study showed significantly lower levels of Vitamin D with higher prostatomegaly grade in males with BPH. Thus Vitamin D levels may have a significant role in the etiopathogenesis of BPH & severity of symptoms. Vitamin D deficiency may

be used as a therapeutic target for prevention and treatment of BPH.

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