

## STUDY OF VITAMIN D LEVELS AND ITS CORRELATION WITH BMI IN ASTHMATIC FEMALES

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### ABSTRACT

**Background:** Asthma is amongst the commonest chronic diseases worldwide. It is an atopic disease characterized by chronic airway inflammation and hyper-responsiveness. Vitamin D has a role as immunomodulator by interacting with T lymphocytes, dendritic cells, mast cells, monocytes and macrophages. Vitamin D receptor is present in the bronchial smooth muscle. Vitamin D alters the airway smooth muscle expression of chemokines and inhibits the expression of a steroid resistant gene. Vitamin D deficiency has been correlated with elevated BMI .

**Aims and objective:** To estimate Vitamin D levels in asthmatic females (cases) and non-Asthmatic females (controls) and to establish a correlation between Vitamin D and BMI.

**Method:** The study was conducted in Govt. Medical College, Kota and attached group of hospitals during December 2014 to January 2016. A total of 60 females of age group between 20 - 40 years were included, out of which 28 females were healthy as control and 32 were diagnosed cases of asthma. Estimation of vitamin D (25OH vitamin D) was done by Chemiluminescence in Hormonal Assay Lab Biochemistry Department Govt. Medical College, Kota. Serum level of vitamin D were categorized into normal ( $\geq 30$  ng/ml or 75 nmol/l), insufficient ( $\geq 20$  to  $< 30$  ng/ml) and deficient ( $< 20$  ng/ml or 50nmol/l).

**Results:** Vitamin D deficiency ( $< 20$  ng/ml) was seen in 18.7% of cases and 14.2% of controls. P value is  $< 0.05$  which is significant. The Pearson's correlation between Vitamin D and BMI ( $r = -0.50$ ). By this study we conclude that Vitamin D deficiency is more prevalent in asthmatic patients. There is a negative correlation between Vitamin D and BMI. Serum vitamin D could be considered in the routine investigation of patients with asthma.

**KEYWORDS:** Asthma, BMI, Immunomodulator, Vitamin D