



ORIGINAL RESEARCH PAPER

Otorhinolaryngology

LEVELS OF VIT D3 IN CASES OF ALLERGIC RHINITIS

KEY WORDS:

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ABSTRACT

We aimed to evaluate the relationship between vitamin D3 and allergic rhinitis to normal people with non allergic rhinitis. The study included 162 patients of which 86 patients were with allergic rhinitis and 76 were the control (subjects). Allergic hypersensitivity skin prick tests were performed. Same antigen was used for all the patients. Serum 25-hydroxyvitamin D3 levels were also measured and classified according to the ARIA guidelines. Vitamin D status of population were surveyed, 40 (66.9 %) patients were deficient, insufficient in 16 (29.4%) and normal in 6 (4.8%) among the group of allergic rhinitis compared to non allergic and control group who had following values respectively 28 (89.3%), 0, 24 (36.6%). The mean of vit D3 among allergic rhinitis group is 19.01 +/- 6.4 ng/ml, 15.80 +/- 5.12 in the non allergic rhinitis and 26.02 +/- 10.02 in the control group. On calculating the law of significant it comes around (p= 0.001). The comparison of the mean 25OHD3 levels according to the severity and duration of AR did not detect statistically significant difference among groups. After calculating mean and conducting investigations like skin hypersensitivity test for allergy the conclusion comes there is no correlation between the vitamin d3 deficiency to allergic rhinitis and non allergic rhinitis with the normal control group and no relations to the duration.

INTRODUCTION

Allergic rhinitis is characterized by inflammatory changes in the nasal mucosa caused by exposure to inhaled allergens. It is a common disease, affecting between 20 - 30% of the world population. Severity can be calculated by total nasal symptoms and IgE serum levels. Vitamin d has immunomodulatory actions on allergic rhinitis as per previous studies in 90% of patients but direct correlations has not been found.

Vitamin d has bronchoalveolar secretory action after given due to the release of IL 3 and IL 4. The percentage of vitamin d deficiency among young female population is 60%, middle age females 55% and more than 65 years around 30%.

METHODS

The study used to find correlation is observational analytic and cross sectional study. A minimum sample of 15 allergic rhinitis and 15 non allergic rhinitis patients were taken in age group of 18 to 50 years. All the patients were thoroughly examined for ear, nose and throat. Vitamin d 3 levels were measured and total nasal symptoms scores were measured. On the basis of severity of symptoms total nasal symptoms score are as followed....

0	No symptoms
1	Mild, unobstructive symptoms
2	Moderate, disturbing but tolerable symptoms
3	Severe, disturbing day to day activities, sleep

Normal vitamin D level ranges between 30-60ng/mL while vitamin D insufficiency is defined to be between 20 and 30ng/mL and vitamin D deficiency is defined to be under 20 ng/mL. AR found most commonly among the age group of 21 to 30 years with mean age of 28 years.

RESULTS

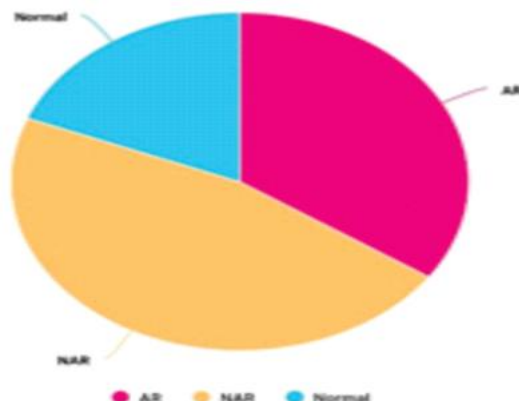
It was found that the level of vitamin d3 in people with allergic rhinitis was less than the patients with non allergic rhinitis, a strong negative correlation was found in the study

VITAMIN D

	DEFICIENT	INSUFFICIENT	NORMAL
AR	40	16	6
NAR and NORMAL	28	0	24

MEAN

AR	19.01 +/- 6.4 ng/ml
NAR	15.80 +/- 5.12 ng/ml
NORMAL	26.02 +/- 10.02 ng/ml



DISCUSSION

This study was useful in comparing the level of vitamin d in AR and non AR. The mean value of vit d in AR is 17 ng/ml. The mean value in non AR is 56ng/ml. On calculating the mean value, the group of non allergic rhinitis has more level of vitamin d3 than the group of allergic rhinitis. Some studies shows that vitamin D3 is effective in decreasing the level of serum IgE.

Some studies have claimed that chromosome 12 whose sequence are 13q14, 7q14, is encoded by vitamin d. Vitamin D is regulated by T cells, B cells, mast cells, APC cells. Vitamin D inhibits the differentiation of mast cells which indirectly inhibits IgE and IL-4. Vitamin D can inhibit the proliferation and differentiation of B-cells into plasma cells by inducing IL-10 and inhibiting the action of IgE, IL-2, IL-4, IL-6 and pro-inflammatory chemokines.

CONCLUSION-

No relation between the level of vitamin d3 and the patients with allergic rhinitis seen. Further study needs to be done.

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