



The relationship between vitamin D levels, vitamin D binding protein and bronchial asthma

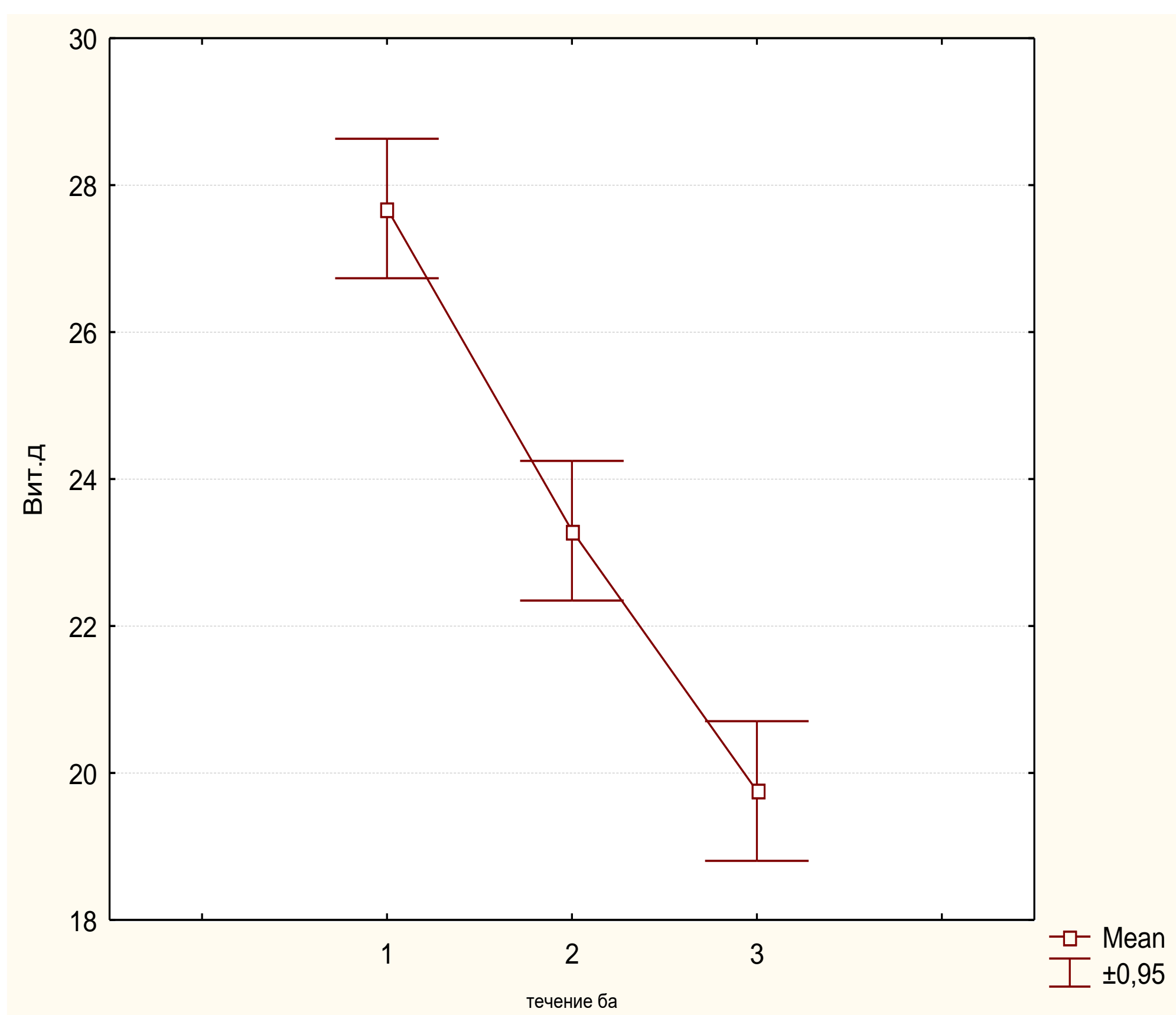
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Introduction

The vitamin D (VitD) axis, which includes Vitamin D, Vitamin D-binding protein (VDBP), and the Vitamin D receptor, has been found to regulate immunomodulatory functions that may be of particular relevance in asthma. Serum VitD is the most typically used surrogate of the VitD axis to explore the impact of the axis on clinical asthma expression. However, the findings are controversial.

The potential effect of vitamin D on the course of pulmonary infection is due to its ability to affect cellular and humoral immunity, thereby reducing the inflammatory process.

The main aim of research to determine the content of vitamin D in patients with asthma and its degree of influence on the course.



vitamin D level depending on the asthma control test (ng/ml): 1- people with well controlled asthma;
2- patients with partially controlled asthma;
3- patients with uncontrolled asthma.
*-p<0,05

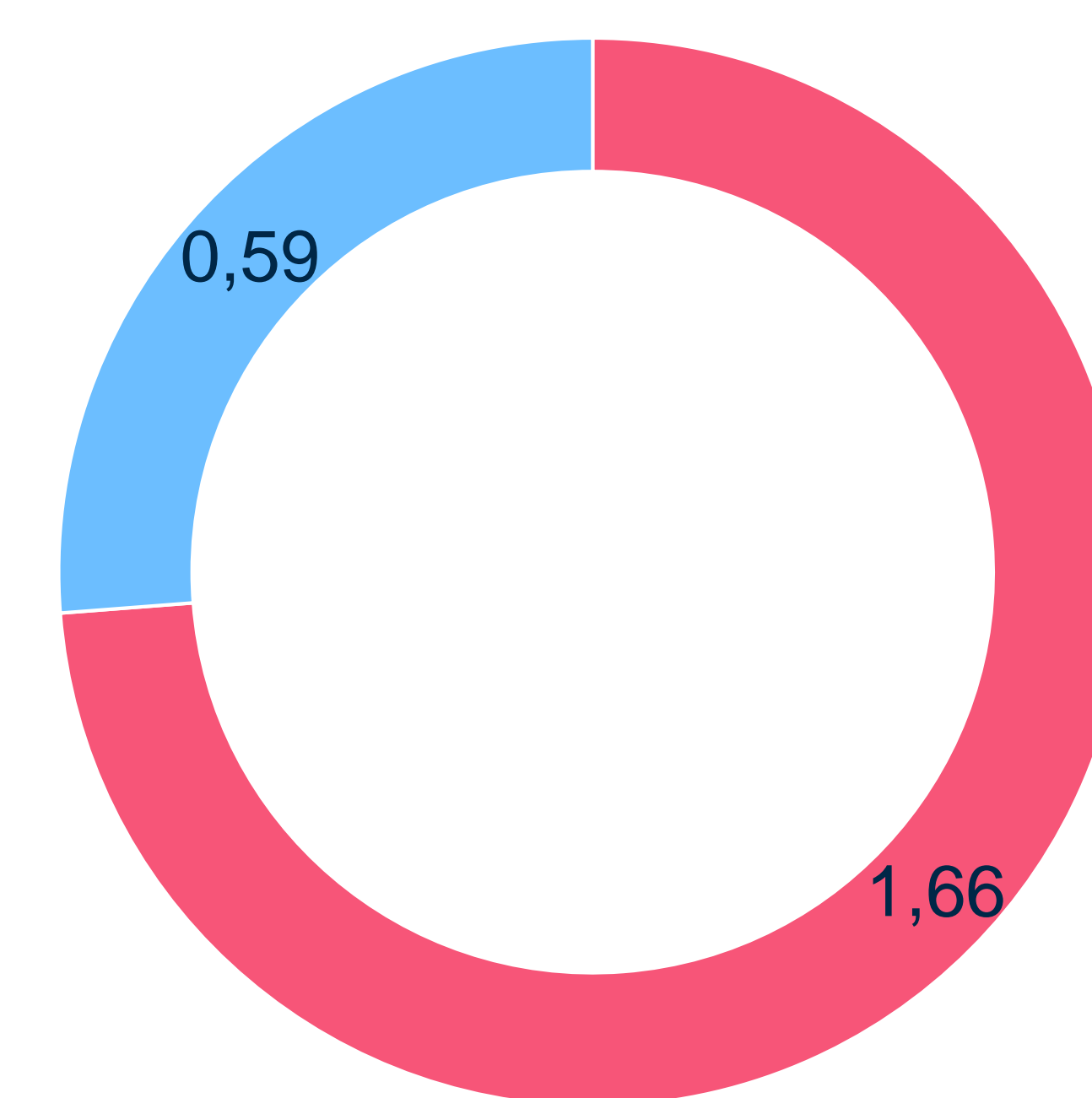
Methods

Our study involved 80 patients with bronchial asthma, of varying severity. The control group consisted of 50 patients without bronchopulmonary pathology. All patients underwent a study of vitamin D and VDBP. An enzyme-linked immunosorbent assay (ELISA, Cloud-Clone Corp.) method was used to measure the serum Vit D and VDBP.

Serum 25- (OH) D level was analyzed by HPLC with Liason Dia Sorin Pleutschland GmbH Germany analyzer, sn-22290044. The level of vitamin D ≥ 30 ng / ml was regarded by us as sufficient, within the range of 29-20 ng / ml - insufficient, ≤ 20 ng / ml - its deficiency.

The statistical processing procedure was carried out using the STATISTICA 12.0 software package and Excel 2007 spreadsheets.

level of VDBP



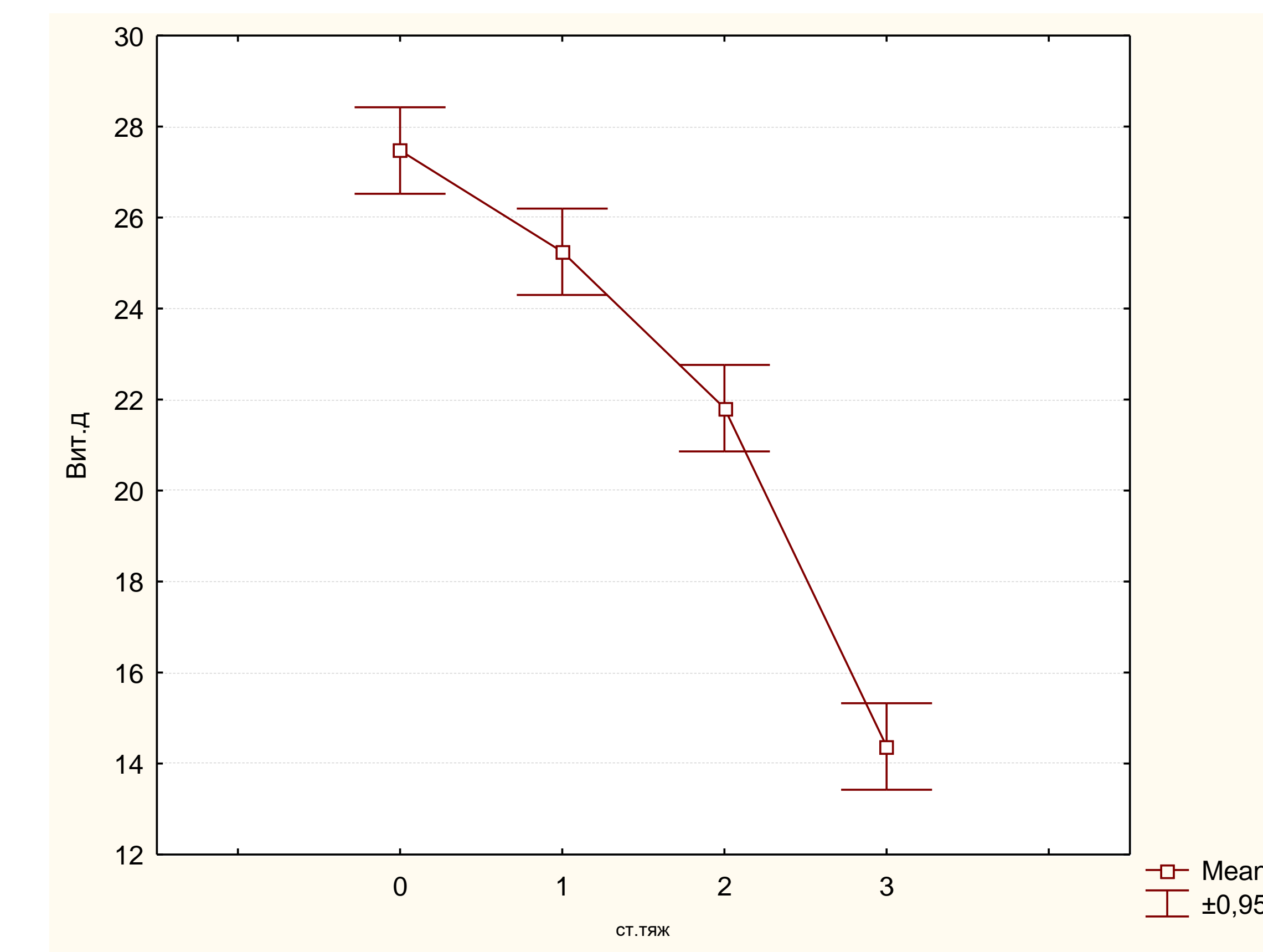
■ patients with asthma ■ patients without asthma

Results

The average level of vitamin D in 80 patients with BA was significantly lower - 18.83 ± 3.73 than in 50 subjects of the comparison group (without bronchopulmonary pathology) - 27.47 ± 3.65 ng/ml ($p = 0.001$). The level of vitamin D in patients with BA with a late onset of the disease was significantly lower and amounted to 15.07 ± 6.79 ng/ml than with a duration of BA more than 10 years - 24.18 ± 6.57 ng/ml ($p = 0.03$).

Moreover, the minimum vitamin D content in patients with severe BA was 5.088 ng / ml, which is a pronounced deficiency of 25 (OH) D and requires correction. Vitamin D deficiency is a marker of deterioration in the course of BA ($r = -0.54$, $p=0.0002$), and leads to more and more severe exacerbations ($r = -0.42$, $p=0.0003$).

Our results also revealed a direct correlation between high level of serum VDBP and development of asthma.



Vitamin D levels in patients depending on the severity of asthma (ng / ml) where: 0 - patients comparison groups; 1- patients with mild asthma; 2 – patients with moderate asthma; 3- patients with severe asthma.
When comparing groups with each other, $p < 0.05$ when compared with the control group $p < 0.05$

conclusions

Therefore, a low level of 25- (OH) D may be one of the risk factors for asthma.

Our results also revealed a direct correlation between high level of vitamin D and serum VDBP and development of asthma.