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AMYLOLYTIC ACTIVITY OF BLOOD IN PEOPLE WITH DIFFERENT DEGREES OF EXCESS BODY WEIGHT

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Abstract
Modern medical terminology defines socially significant diseases as the most common diseases that change the quality and duration of life. The relevance of the problem of obesity among young people in our time is beyond doubt. Researchers around the world inextricably link it, first of all, with the practically immobile lifestyle of the majority of teenagers, who are not accustomed to a culture of healthy eating.

Key words
Obesity, microflora, metabolic disorder, socio-economic factors, lifestyle, intestinal microflora.

INTRODUCTION

The problem of excess weight has not only deviations in the somatic status, but also in the psychological perception of oneself and a person's self-esteem. Obesity in young people is becoming a worldwide epidemic with a continuous increase in prevalence over the past three decades, which causes some concern, since metabolic, cardiovascular complications associated with obesity, as well as metabolic syndrome, occur in young patients long before clinical manifestation [1,2,3]. Obesity, both in adults and in children and adolescents, is a metabolic disorder, accumulation of excess fat in the body and weight gain.

Some modern works on the problem of obesity show that intestinal microflora also affects the overall energy balance in the body [4,5,6]. Today, the proposed scheme of metabolic shifts, in which the mechanism of obesity arises as a result of dysbiotic shifts, is proposed to be considered as the result of a special microbial signal that suppresses the post-induced adipose factor (PIAF) of the human body. The result of this is an increase in the synthesis and accumulation of fat mass [7,8,9]. Associations of certain types of microflora can contribute to further obesity by forming new complexes of triglycerides obtained as a result of fermentation of plant products in the intestine [10,11]. Experimental studies also show that changes in the intestinal microflora lead to energy storage and, as a result, obesity.

Issues of obesity in young patients, considered at the present stage, have shown that the oral microflora is a highly sensitive indicator system that responds with qualitative and quantitative shifts to changes in the state of various organs and systems of the body. More than 300 species of microorganisms are found in the human oral cavity and pharynx, which are divided into obligate and facultative (transient). Their main function is to ensure colonization resistance of the macroorganism (Borovsky E.V., Leontiev V.K.; Latyshev O.Yu.). Scientists in western Sweden have studied the relationship between oral health indicators and obesity and determined the level of influence that socio-economic factors, lifestyle, and comorbidities have on them.

MATERIALS AND METHODS.

The researchers conclude that their findings indicate an association between obesity and poor oral health and recommend that this indicator be considered in future oral health studies [12,13].

Currently, the attention of many researchers is attracted by changes in the amount of various indicator markers (bicarbonate alkalinity and enzymes) in the saliva of patients with various acute and chronic pathological changes in internal organs and systems. The state of salivary microbiota is determined by some authors using the enzymatic method of Levitsky A.P. (2007) based on the ratio

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of urease activity according to Nessler (1996) to lysozyme activity according to Levitsky A.P. and Zhigina A.A. (2005) in unstimulated saliva [14,15].

According to the studies, in young obese patients in unstimulated saliva the activity of the lysozyme enzyme is significantly reduced - (51.0 ± 6.0) units/l at a normal level of (89.0 ± 14.0) units/l ($p < 0.05$) and urease activity increases excessively - (0.660 ± 0.032) μkat / l at the norm (0.090 ± 0.009) μkat / l ($p < 0.001$). Urease activity was inversely related to lysozyme activity ($r = 0.78$), which indicates indirect shifts in the ratio of normal microbiota of the gastrointestinal tract in the body of young patients against a background of obesity[16,17].

Thus, in young obese individuals, the activity of lysozyme significantly decreases and the activity of urease sharply increases, which corresponds to dysbiosis. The degree of dysbiosis increases sharply (almost 8 times) in obese patients (7.97 ± 0.76) units. compared to (1.0 ±0.10) units. with indicators in healthy people with normal body weight; $p < 0.001$. These data indicate a shift in the ratio of normal microbiota in the body as a consequence of the development of disorders of local nonspecific immunity, which may become the basis for further research in this direction with the aim of developing preventive and therapeutic agents to correct changes in the microbiocenosis of the oral cavity in young patients with alimentary-constitutional obesity.

RESULTS AND CONCLUSION

After analyzing the literature data, we set a goal to study the features of enzyme homeostasis in the face of amylase activity in obesity of varying severity. To achieve this goal, first of all, our patients were divided into appropriate groups. In each group, the age and gender of the patients were identified (Fig. 1). When examining the data, it is clear that the state of overweight (OB) is not observed in elderly and elderly people. Apparently, this can be explained by the central mechanisms of metabolic regulation at this age, at which there is an involution of the functions of the endocrine glands and thus the hormonal regulation of metabolism.

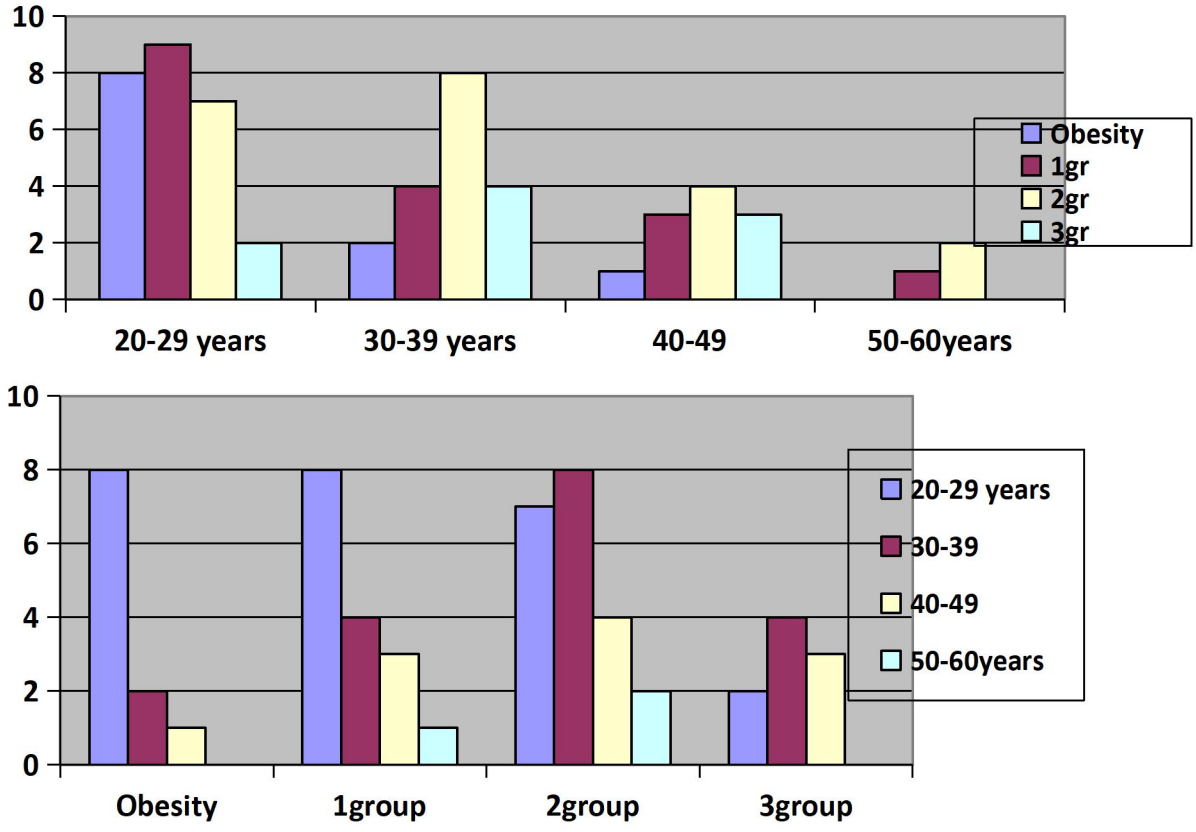

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Fig.1 Proportional ratio of the severity of nutritional obesity varying degrees by age

As can be seen from the presented diagrams, the age most susceptible to obesity ranges from 20 to 40 years. In the group of patients over 50 years of age, BMI values below 29 and above 40 were not found.

Amylolytic activity of blood, which was taken by collecting venous blood, was determined in all patients on an empty stomach. As is known, amylase catalyzes the hydrolysis of glycosidic bonds to maltose. Very high serum amylase levels are observed in acute pancreatitis (more than 10 times the upper limit of normal).

The activity of blood amylase also increases with mumps - inflammation of the salivary glands. With inflammation of the salivary glands, amylase activity also increases in saliva, which is not observed with pancreatitis.

According to our results, the amylolytic activity of blood in individuals with IV and varying degrees of nutritional obesity tended to increase its activity. However, it was also noted that with age, i.e. in patients aged 50-60 years and older, the amylytic activity of the blood changed, not always adequately (Fig. 1).

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