promoted the decrease of the values down to the control ones in both groups (7.9 ± 0.28 con 7.82 ± 0.09 lg CFU/g and 7.8 ± 0.12 con 8.5 ± 0.05 lg CFU/g).

The amount of lactose positive colon bacilli both in case of allergic diseases of eyes and infectious ones reached the control values (8.65 ± 0.35 con 8.6 ± 0.2 con 8.46 ± 0.38 lg CFU/g) after the therapy.

The values of lactose negative colon bacilli after the complex therapy exceeded the values of the control group a little bit.

The rise of Staphylococcus is a pathogenic factor, especially Staphylococcus aureus amount in the examined children before the therapy was almost 5 times higher than normal, and after the therapy there was a notable decrease.

The number of isolated strains of Candida after the complex therapy decreased 1.3 times in comparison with the values before therapy and almost reached the control figures. The same tendency is observed in the study of Proteus.

Thus, after the complex therapy children with ADE had recovery of intestinal micro flora both in cases of allergic diseases of eyes and infectious diseases.

Conclusion:

1. Children with allergic diseases of eyes have peculiarities of immunologic status dependent on the etiology of the process.

2. Children with allergic damages of eyes have registered explicit deviations of dysbiotic character testifying the 2 degree of dysbacteriosis.

3. The special pathogenetic complex therapy provides multi-level protection of intestine, stimulating immune responce and activating non-specific factors of organism's protection.

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Anthropometric parameters of the head and maxillofacial part in Children with diabetes mellitus and its complience to the principle of the golden ratio

Abstract: The study details the morphometric parameters of the head and maxillofacial region in a 9-year-old children, divided into 2 groups — health and diabetes mellitus. The obtained data are compared against the parameters of the golden ratio.

Diabetes mellitus (DM) is a chronic syndrome of hyperglycemia, developing as a result of the impact of genetic and exogenous factors. Nowadays, more than 120 million people are suffering from this disease around the globe. The annual number of newly diagnosed cases exceeds 6–10 % relative to the total number of patients, which leads to their doubling every 10–15 years [2–4; 9]. According to various authors, from 3,5 to 8 % of all patients with DM are chil-dren — in the ages of 6 to 13 years [6; 7; 10]. In 2007 the total population of children in the world (0–14) reached 1,8 billion, of which 0,02 % had DM. This means that approximately 440,000 children have DM and 70,000 new cases are diagnosed each year [5; 8].

DM occurs in children relatively sharply and without cure, usually acquiring heavy progressive course [7; 8; 12]. This development of DM in children is due to the intensive growth of the body of the child and, accordingly, enhanced metabolism. The period of DM in children de-pends on the age of the child, when the disease begins. The younger the child, sick with MD, the harder it runs and the more various the threat of complications are [5; 6; 12].

Limits of variation of the anthropometric parameters (AP) of body parts of children of the same age tend to go beyond the size of the oscillations in younger or older children. This is a transgressive variability which provides necessity of quantitative determinations [1, 2].

A lot of rules and standards have been suggested to describe the ideal proportions of the human body, but it is the golden ratio which defines its true beauty. The golden proportion was first described in 4. BC. It represents unique division line AB into two segments (AC and CB) such that AB is divided by the AU and the ratio is equal division of the segment AC NE. The result of this division is the number φ, equal to 1,618. Thus, the golden ratio (GR) is the ratio of interactive proportions, in which the whole is connected with its big part, as a big part is connected with a small part [Shaparenko P. F., 1994].

The form in the basis of which there is a combination of symmetry and the GR contribu-tes to the best visual perception and the emergence of feelings of beauty and harmony. Proportions of the various parts of our body are the number very close to the golden section. If these proportions coincide with the value of the Fibonacci numbers (1: 1,618), the appearance or the human body is considered to be perfectly folded [9].

In addition, the study of morphometric parameters of the head (MPH) and the dental system in DM in childhood may be one of the first signs of the diagnosis of this pathology.

The purpose of the study — to determine the AP head and MFP of 9-year-old healthy children and children with DM and correspondence of the results to the GR.

Materials and methods. The studies were conducted in school and, the children's de-partment of the regional endocrinology clinic. The resulting AP were studied by dividing the children into 2 groups: 9-year-old healthy children (I-group), 9-year-olds with DM (II-group). Clinical and anthropometric methods followed by statistical data processing were used to obtain the parameters of the face and head. The measurements were made between standard cranio-metrical points with calipers (division value 0,1 mm.). Head circumference — measured by mea-suring tape, the longitudinal dimension of the head, the transverse dimension of the head, zygomatic and mandibular facial diameter measured by tazomer.

Results of research and their discussion. Research showed that head size of 9 boys of the first group size circumference ranged from 50,2 to 56,1 sm., on average (AV) — 53,42 ± 0,14 sm. Longitudinal diameter of the head varies from 16,2 to 17,8 sm. AV — 16,78 ± 0,12 sm., and the transverse size of the head ranged from 11,8 sm. to 13,4 sm. AV — 12,15 ± 0,09 sm. transverse size of the forehead varies from 9,85 sm. to 11,4 sm., AV — 10,57 ± 0,1 sm. Multilevel or vertical head diameter is in the range of 11,8–13,5 sm., with an AV — 12,16 ± 0,07 sm. Zygomatic diameter ranging from 9,0 cm. to 10.4 cm. AV — 9,39 ± 0,12 sm. and mandibular diameter varies from 8,7 sm. to 10,2 sm. AV — 9,51 ± 0,12 sm. morphological face height ranged from 12,0 sm. to 13,2 sm. — AV 12,5 ± 0,14 sm., and physiognomic face height of 17,0 sm. to 18,2 sm. — AV — 17,48 ± 0,21 sm.

Analysis of the MPH and MFP of the nine-year-old healthy girls of the first group sho-wed that the length of the head circumference ranged from 51,2 to 56,1 cm., AV — 53,9 ± 0,14 sm. Longitudinal diameter of the head varies from 16,5 to 17,9 sm. AV — 16,80 ± 0,12 sm. and the transverse dimension of the head from 12,8 sm. to 14,4 sm. AV — 13,45 ± 0,09 sm. The transverse dimension of the forehead ranged from 10,1 sm. to 12,3 sm. AV — 11,05 ± 0,1 sm. Vertical head diameter varies from 12,9 sm. to 14,5 sm. AV — 13,76 ± 0,07 cm. Zygomatic diameter ranging from 9,1 sm. to 10,4 sm. AV — 9,7 ± 0,12 sm. and mandibular diameter ranging from 8,1 cm. to 9,9 sm. AV — 9,05 ± 0,12 cm. morphological face height of 12,1 sm. to 13,9 sm. — AV of 12,85 ± 0,14 sm. physiognomic face height of 17,7 sm. to 19,0 sm. — AV — 18,14 ± 0,21 sm.

Studies have shown that head circumference length of 9 year old boys of the second group (children with DM) ranges from 50,4 to 56,4 sm. AV — 53,62 ± 0,14 sm. Longitudinal diameter of the head ranges from 16,1 to 18,0 sm. AV — 16,8 ± 0,12 sm. a cross head size ranged from 11,7 sm. to 13,7 cm. AV — 12,45 ± 0,09 sm. transverse dimension forehead varied from 10,1 sm. to 11,6 sm. AV — 10,87 ± 0,1 sm. Vertical head diameter ranges from 11,8 sm. to 13,5 sm. AV — 12,16 ± 0,07 sm. Zygomatic diameter ranging from 9,0 sm. to 10,7 sm. AV — 9,5 ± 0,12 sm. and mandibular diameter ranging from 8,9 sm. to 10,6 sm. AV — 9,98 ± 0,12 sm. Morphological face height of 11,7 sm. to 12,9 sm. — AV 12,05 ± 0,14 cm. and physiognomic face height of 16,7 sm. to 17,7 sm. — AV — 16,98 ± 0,21 sm.

Analysis of the MPH and MFP of nine-year-old girls of the second group showed that the length of the head

circumference ranged from 52,9 to 55,8 sm. with AV — 54,89 ± 0,14 sm. The longitudinal diameter of the head is within 16,7–18,0 sm. AV — 17,5 ± 0,12 sm. Transverse head size ranged from 13,0 sm. to 14,7 sm. AV — 13,95 ± 0, 09 sm. transverse size of the forehead ranged from 10.9 sm. to 12,7 sm. AV — 11,05 ± 0,1 sm. Vertical head diameter varies from 13,0 sm. to 14,9 sm. AV — 14,46 ± 0,07 sm. Zygomatic diameter ranging from 9,5 sm. to 10,4 sm. AV — 9,7 ± 0,12 sm. and mandibular diameter ranging from 8,7 sm. to 10,9 sm. AV — 9,89 ± 0,12 sm. morphological face height is in the range — 11,0–13,1 sm. AV — 12,2 ± 0,14 sm., and physiognomic face height from 17,0 –18,3 sm. AV — 17,94 ± 0,21 cm.

The three division of face is generally accepted in anthropologists: the top — from the border of the hairy part of the forehead to the middle brow, middle — from the middle brow to under nose points lower — from under nose point to the chin. When these three dimensions are correct the face is considered to be the ideal corresponding to the GR.

The measurements showed that the upper part of the face in 9-year-olds boys of the first group ranges from 5,8 cm. to 6,6 sm. AV — 5,91 ± 0,12 sm., and in 9 years old girls from 5,7 sm., up to 6,9 sm. AV 6,03 ± 0,16 sm. Middle part of the face of boys of the first group ranged from 5,7 sm. to 6,6 sm. AV 5,95 ± 0,14 sm., and in 9 year-old girls within — 5,5–6,8 sm. AV — 6,04 ± 0,15 sm. The lower part of the face in 9-year-olds boys of the first group ranges from 5,9 sm. to 6,5 sm. AV 5,82 ± 0,15 sm., and 9-year-old girls in this group ranged from 5,5 sm. to 6,8 sm. AV — 6,12 ± 0,14 sm. The comparison shows that the ratio of the distance from the tip of the chin to the top of the eyebrows in males (12,5 ± 0,16 sm.) to the distance from the top of the eyebrows to the top of (7,6 ± 0,14 sm.) is — 1: 1.65.

The GR of the distance from the tip of the chin to the top of the eyebrows (12,5 ± 0,16 sm.) to the distance from the top of the eyebrows to the top of (7,7 ± 0,16 sm.) in girls is 1: 1,62.

Examining the conformity MPF of 9-year-old children with diabetes to the principle of the GR have shown that the upper part of the face in 9-year-olds boys ranged from 5,7 sm. to 6,3 sm. AV — 5,85 ± 0,11 sm., while in the 9 year old girls it was from 5,6 sm. to 6,9 sm. AV 6,06 ± 0,13 sm. The middle part of the face in 9-year-olds boys ranged from 5,3 sm. to 6,4 cm. AV 5,65 ± 0,12 sm., while the 9 year old girls within — 5,3–6,6 sm. AV — 5,95 ± 0,14 sm. The lower part of the face in 9-year-olds boys with DM ranges from 5,4 sm. to 6,2 sm., AV 5,49 ± 0,13 sm., and 9 year old girls, this parameter varied from 5,3 sm. to 6,4 sm. in average — 5,85 ± 0,13 sm.

The GR of the distance from the tip of the chin to the top of the eyebrows of the boys of the second group (11,8 ± 0,13 sm) to the distance from the top of the eyebrows to the top of (7,2 ± 0,11 sm) is 1: 1.64, while in the girls of the second group (12,2 ± 0,12 sm/7,6 ± 0,10 sm.) it is 1: 1.60.

Thus, studies have shown that MPH of the children with diabetes is larger than healthy ones. In our opinion this is due to the constant changes in the level of insulin (hormone status) in a young body, which affects the volume of the brain (cerebral edema). Parameter of the face of healthy children is larger than children with DM. This demonstrates the backwardness of the developing bones of the face and dental system in DM. MPH and jaw face area in girls is big-ger than boys in both groups. This demonstrates the backwardness of the MPH and MFR in boys in comparison with the girls in the same age.

The ratio of the upper, middle and lower parts of the face in girls of the both groups is closer to the law of the golden ratio, compared to boys. In the first group relationship between the MPF is more appropriate to the number of parameters or Fibonacci GR compared with the second group. In the second group the size of the upper segment of the face is more than the lo-wer segment.

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