

Established that in children with overweight and obesity there were external eating behavior changes and emotional eating behavior changes. This problem needs psychological correction with children and their families.

Key words: children, obesity, overweight, eating behavior.

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SONOGRAPHIC PARAMETERS CORRELATION OF SPLEEN WITH ANTHROPO-SOMATOTYOLOGICAL BODY INDICATORS OF PRACTICALLY HEALTHY WOMEN FROM PODILLYA OF FIRST MATURE AGE

Summary. *The article presents the results of a study of correlations sonographic parameters of spleen with anthropo-somatometric indexes of 154 practically healthy women in age from 22 to 35 years from Podillya. Installed multiple statistically significant, mainly weak direct links between sonographic and spleen size and derived from these parameters, and overall, longitudinal (except height finger points), covering size, diameter of the body (mostly anteroposterior chest size, width of shoulders, inter-ridge and between-swivel distances of pelvis), muscle, fat and bone components of body weight and mainly weak feedback with ectomorphic component somatotype by Heath-Carter. Only for splenic index set multiple statistically significant, mainly weak reverse, connections between the lateral dimensions of the head, face and half of spanning size of the body.*

Key words: correlation, sonography of spleen, anthropo-somatotypological performance, healthy women.

Introduction

Spleen - an organ which is involved in blood formation and blood supply of the body. A large number of anatomical and topographical features and many functions conjugation in a relatively small amount of organ explain the change in response to a wide range of factors: infectious, immune, hemodynamic, and so on. But they all lead to changes in the size of spleen and its density. It's a reflection of disease pathologies that are in other organs. Therefore, changed ultrasound morphometric parameters of spleen normally allow specifying not only its disease but also the pathology of other organs and systems [3, 5].

The most optimal and correct position of the anthropological approach is to identify the correlation relationships between the size of the spleen and anthropometric data individually of an investigated. It is necessary to study their characteristics, size and direction, as well as to evaluate its accuracy [8, 11]. Establishing correlations, in their turn, is the basis for conducting regression analysis, allowing you to imagine a relationship between observable variables in the equation, ie analytical form, identify trends changing characteristics, trends and predict the value of biomedical parameters [9].

Purpose - to establish features of links between the sonographic parameters of spleen and anthropo-somatic indices of practically healthy women from Podillya of first mature age.

Materials and methods

On the basis of Research center of National Pirogov Memorial Medical University, Vinnytsya within the general university scientific subjects studied sonographic parameters of the spleen in 154 healthy women of Podillya age from 22 to 35 years using ultrasonic diagnostic system CAPASEE model SSA-220A (Toshiba, Japan), convex probe PVG-366M 3,75 MHz and diagnostic ultrasound system Voluson 730 Pro (Austria), 3,5 MHz convex transducer. The examination and ultrasound biometry of the spleen performed by the conventional method of left inter-costal access in the frontal plane along the longitudinal axis of the spleen or oblique in two mutually perpendicular planes of scanning [6]. We determined the length, width, height, spleen, an area of its longitudinal and cross-sectional tissue density acoustic indicator spleen, splenic vein diameter. According to the formula A.I. Derhachev [5] calculated spleen volume (volume = 0.52 x length x width x height) and splenic index (splenic index = length x width).

Anthropometric survey performed by V.V. Bunak [4]; somatotype evaluation was carried out by a mathematical scheme J. Carter and B. Heath [12]; the absolute amount of fat, bone and muscle components of body weight was calculated by the formula J. Matiegka [15] and muscular components in addition - using formulas of the American Institute of Nutrition (AIH) [14].

Assessment of correlation sonographic parameters of spleen with anthropo-somatometric performance in practically healthy women from Podillya implemented using a licensing package "STATISTICA 6.1", using statistical parametric Pearson.

Results. Discussion

Analysis of sonographic parameters significant correlations of spleen with indicators structure and size of the body in practically healthy women of Podillya first mature age showed the following distribution ties with *spleen parameters* - 263 reliable connections of possible from 531 (49.5%), of which 46 - 8.7% of direct medium strength; 200 - 37.7% weak direct effect; 3 - 0.6% of the average reverse effect; 14 - 2.6% reverse weak force.

Quantitative analysis of sonographic parameters significant correlations of spleen with indicators structure and size of the body revealed the following distribution relationships with *indicators of structure and body size: cephalometric rates* (14 - 22.2% of cephalometric indicators; of which 1.6% reliable direct medium strength; 12.7% reliable direct weak force; 3.2% reliable reverse medium strength; 4.8% reliable reverse weak force); *pervasive body size* (19 - 70.4% of the total number of total size; of them 40.7% reliable direct medium strength; 29.6% reliable direct weak force); *longitudinal body size* (20 - 44.4% of the total longitudinal dimensions; all significant direct weak force); *WDE* (12 - 33.3% of WDE indicators; of which, 2.8% reliable direct medium strength; 30.6% reliable direct weak force); *body diameters* (31 - 43.1% of the total number of indicators diameters of the body; of which, 2.8% reliable direct medium strength; 40.3% reliable direct weak force); *encompassing body size* (97 - 71.9% of all encompassing dimensions; of them 10.4% reliable direct medium strength; 57.8% reliable direct weak force; 3.7% reliable reverse weak force); *TSFF* (31 - 38.3% of TSFF indicators; of which, 9.9% reliable direct medium strength; 28.4% reliable direct weak force); *somatotype components by Heath-Carter* (11 - 30.6% of the total number of indicators somatotype components; of which, 2.8% reliable direct medium strength; 13.9% reliable direct weak force; 13.9% reliable reverse weak force); *performance component composition of body weight* (28 - 77.8% of the performance component composition weight; of them 22.2% reliable direct medium strength; 50.0% reliable direct weak force; 2.8% reliable reverse medium strength; 2.8% reliable reverse weak force).

Analysis of sonographic parameters reliable correlations with indicators spleen structure and size of the body healthy women found following *multiple connections*, reliable direct mainly weak ($r =$ from 0,16 to 0,29) and medium strength ($r =$ from 0,30 to 0,39) connections majority of sonographic parameters of spleen (except acoustic density of the spleen in longitudinal section and splenic vein diameter) with *the majority of total, longitudinal* (except height and cross-sectional area of the spleen) and *embrace body size*, more than *half of the indicators WDE* (except for thickness, height and cross-

sectional area of the spleen), almost *half the diameter of the body*, more than *half of the indicators TSFF* (except for thickness and splenic index), almost all *indicators component composition of body weight, endomorphic somatotype component* (except for thickness and splenic index) and *head circumference* (except height of the spleen) and significant inverse weak force ($r =$ from -0,16 to -0,19) connections of these spleen parameters (except thickness and height) with *ectomorphic somatotype component*; significant inverse mostly weak ($r =$ from -0,18 to -0,29) and medium strength ($r =$ from -0,31 to -0,56) connections acoustic density of the spleen in longitudinal section with *1/3 embrace body size, cephalometric performance and muscle component body weight by methods Matejko and AIH*, and reliable direct mainly medium ($r =$ from 0,31 to 0,50) and the weak force ($r =$ from 0,21 to 0,27) this parameter of the spleen connections with almost all indicators of TSFF, *endomorphic component somatotype and fat body mass component method Matejko*.

For spleen, typical early laying in the embryonic period, and at the time of birth it reaches high morphological maturity. Its relative weight and size in children, adolescents, approximately the same as in the years of youth and adulthood [17]. This explains the similarity of qualitative and quantitative characteristics of correlation parameters of the spleen with anthropometric parameters defined by domestic and foreign researchers in different age groups studied [2, 7, 10, 16].

It is logical to assume that there are gender differences correlations spleen ultrasound indices with anthropometric indicators. However, in the age aspect in common groups of men and women they are not essential as in direction and parameters in groups [1, 2].

In a small number of works installed linear correlation the size of the spleen with anthropometric indicators of body, composition component of body weight and physique primary components that are understandable way different in people with different somatotypes [2, 7, 10, 16]. This is part of the general problem of establishing correlations between the characteristics of morphofunctional organization man of reactivity and resistance to stress factors or learning about "normal reaction" of the body [11]. That is, it is possible to use the constitutional typology correlations as diagnostic and prognostic characteristics, which is the subject of our future research.

Conclusions and prospects for further development

1. In practically healthy women of Podillya installed multiple statistically significant, preferably straight weak (r from 0,17 to 0,29), the relationship between sonographic spleen size and derived from these parameters (except splenic index) and total, longitudinal (except height finger points), embrace dimensions (including head circumference), body diameters (mostly anteroposterior size of the chest, shoulder width, between the ridge and between swivel distances of pelvis), muscle, fat and bone components of body weight.

2. For splenic index set multiple statistically significant,

weak valves, connections between the lateral dimensions of the head, face and half of the embrace size of the body.

3. Sonographic size of the spleen and derived from them parameters much better in quantitative and qualitative terms correlate with anthropometric indices and somatic than the diameter of splenic vein.

Prospects for future research is to study constitutional features links between sonographic parameters of spleen and anthropo-somatic indicators of healthy men and women with different Somatotypes from Podillya that are important in the study of specific morphological criteria for the diagnosis of norm and pathology.

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КОРЕЛЯЦІЇ СОНОГРАФІЧНИХ ПАРАМЕТРІВ СЕЛЕЗІНКИ З АНТРОПО-СОМАТОТИПОЛОГІЧНИМИ ПОКАЗНИКАМИ ТІЛА ПРАКТИЧНО ЗДОРОВИХ ЖІНОК ПОДІЛЛЯ ПЕРШОГО ЗРІЛОГО ВІКУ

Резюме. В статті наведені результати дослідження кореляцій сонографічних параметрів селезінки з антропо-соматометричними показниками 154 практично здорових жінок Поділля віком від 22 до 35 років. Встановлені множинні статистично значущі, переважно слабкі прямі, зв'язки між сонографічними розмірами селезінки й похідними від них параметрами та тотальними, позовжніми (окрім висоти пальцевої точки), обхватними розмірами, діаметрами тіла (переважно передньо-заднім розміром грудної клітки, шириною плечей, міжгребневою і міжвертлюговою відстанями таза), м'язовим, жировим і кістковим компонентами маси тіла та переважно слабкі зворотні зв'язки з екоморфним компонентом соматотипу за Хіт-Картером. Лише для селезінкового індексу встановлені множинні статистично значущі, переважно слабкі зворотні, зв'язки між поперечними розмірами голови, обличчя і половиною обхватних розмірів тіла.

Ключові слова: кореляції, сонографія селезінки, антропо-соматотипологічні показники, здорові жінки.

Антоненць Е.В.

КОРЕЛЯЦІЇ СОНОГРАФІЧНИХ ПАРАМЕТРІВ СЕЛЕЗІНКИ З АНТРОПО-СОМАТОТИПОЛОГІЧНИМИ ПОКАЗНИКАМИ ТІЛА ПРАКТИЧНО ЗДОРОВИХ ЖЕНЩИН ПОДОЛЛЯ ПЕРВОГО ЗРЕЛОГО ВОЗРАСТА

Резюме. В статье приведены результаты исследования корреляций сонографических параметров селезенки с антропо-соматометрическими показателями 154 практически здоровых женщин Подолья в возрасте от 22 до 35 лет. Установлены многочисленные статистически значимые, преимущественно слабые прямые, связи между сонографическими размерами селезенки и производными от них параметрами и тотальными, продольными (кроме высоты пальцевой точки), обхватными размерами, диаметрами тела (преимущественно передне-задним размером грудной клетки, шириной плеч, межгребневой и межвертлюговой расстояниями таза), мышечным, жировым и костным компонентами массы тела и преимущественно слабые обратные связи с эктоморфным компонентом соматотипа по Хит-Картеру. Только для селезеночного индекса установлены многочисленные статистически значимые, преимущественно слабые обратные, связи между

поперечними розмірами голови, лица и половиной обхватных размеров тела.

Ключевые слова: корреляции, сонография селезенки, антропо-соматотипологические показатели, здоровые женщины.

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RELATIONS RHEOENCEPHALOGRAPHY INDICATORS WITH CONSTITUTIONAL PARAMETERS OF A BODY OF PRACTICALLY HEALTHY YOUNG FROM PODILLYA

Summary. *In almost healthy young men of Podillya defined features connections constitutional body parameters with indicators of cerebral circulation. The greatest number of reliable connections established: among peak performance - with an incisor amplitude (preferably straight with girth and length of the head and the back - with WDE of forearm, with longitudinal body size; among time performance - for the duration of the uplink, the phase of fast and slow blood flow (preferably directly with the girth and length of the head, total body size, with longitudinal body size, with WDE upper extremity and hip, with cover and transverse dimensions of the body, with muscle and bone mass of body) and for the duration of the downlink part, which has backward links with the longitudinal dimension of the body; among calculation indices - for dicrotic index, among average speeds fast and slow blood flow (preferably with total return, longitudinal size, with muscle and bone mass body) and for the index tone of all arteries and arteries of large, medium and shallow caliber (mostly straight with total body size, with part of the transverse dimensions of the body with mesomorphic somatotype component by Heath-Carter).*

Key words: *rheoencephalography, practically healthy young men, constitutional parameters of body, performance of cerebral circulation.*

Introduction

At the present stage of development of health care priority is to respect the anthropological approach, the key provisions of which consists in the fact that the structural and functional indicators must be assessed taking into account the constitutional, morphological and organic metric features and types [15]. Within the framework of this approach in studying the physiology of cerebral blood flow is important to identify relationships between morphofunctional features of the vascular system and the growth energy of total body size, harmonious constitution, constitutional peculiarities of investigated.

Study connectivity indicators of cerebral hemodynamics with of constitution types devoted works of some researchers [4, 5, 6, 7], contributed to this application rheoencephalography (REG) which can evaluate the state of cerebral blood flow, identify the location and extent of its violations - narrowing, obturation of brain vessels, which can lead to various unpleasant and sometimes extremely dangerous symptoms [8, 14].

In this context, the *aim* of this study was to determine the characteristics of connections anthropometric, somatic and component composition performance of body weight among almost healthy young men from Podillya with indicators of cerebral circulation.

Materials and methods

Anthropometric, somatotypological and rheoencephalography study conducted among 143 healthy urban youths

aged from 17 to 21 years, in the third generation residents of Podilskiy region of Ukraine on the base of Research center of National Pirogov Memorial Medical University, Vinnytsya. Committee on Bioethics of National Pirogov Memorial Medical University, Vinnytsya found that materials research does not deny the major bioethical standards of the Helsinki Declaration, the European Convention on Human Rights and Biomedicine (1977), the relevant provisions of the WHO and the laws of Ukraine.

Anthropometric studies in accordance with the scheme V. V. Bunak [2] included a definition: total body size, longitudinal, transverse, embrace size, pelvic size and thickness of skin and fat folds (TSFF). Craniometry included a definition: the circumference of the head (glabella), sagittal curves, the greatest length and width of the head, the smallest width of the head, the width of the face and lower jaw [1]. Somatotypes determined by the method J. Carter and B. Heath [18] and the component composition of body weight - the method J. Matiegka [19] and the American Institute of Nutrition (AIH) [20].

Rheoencephalography settings determined using a computer diagnostic complex, which provides simultaneous detection of ECG, phonocardiograms, basic and differential tetrapolar rheogram and blood pressure. As a result, processing rheogram automatically determined characteristic points on the curve, determine key indicators, and formed a justified opinion on the circulatory system of