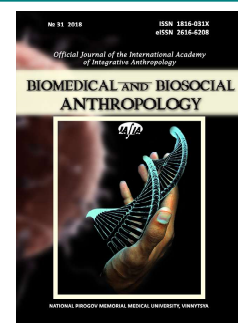




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Correlations of cerebral circulation indicators with body structure and body size indicators in practically healthy young women of the middle intermediate somatotype

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According to the data of modern scientific literature, to determine the risk groups of vascular diseases of the brain at the stage before the development of the disease, it is necessary to study the dependence of cerebral functional indicators of the population on their constitutional status, age, region of residence. The purpose of the study was to determine the features of correlations of cerebral blood circulation with anthropo-somatotypological characteristics of practically healthy young women of the middle intermediate somatotype. On the base of the research center of the National Pirogov Memorial Medical University, Vinnytsya conducted a comprehensive study of 30 practically healthy urban young women of the middle intermediate somatotype, in the third generation of residents of the Podillia region of Ukraine. All young women undergo rheoencephalography using a computer diagnostic complex; anthropometric research according to the scheme of V. V. Bunak; craniometry; determination of somatotype by J. Carter and B. Heath method and components of body mass index by J. Matiegka and American Institute of Nutrition (AIN) methods. The analysis of correlations of the obtained results was carried out using the Spearman method in the licensed statistical package "STATISTICA 6.1". In practically healthy young women of the middle intermediate somatotype, the following multiple connections of indicators of cerebral circulation with anthropo-somatotypological parameters of the body are established: direct, mostly unreliable, average strength ($r = 0.31$ to 0.36) connections of most time indices with girth the thighs and time of rapid blood filling with one third of the indexes of the thickness of skin and fat folds (TSFF), the endomorphic component of the somatotype and fat component of the body mass using the Matiegka method; direct, mostly reliable, average strength ($r = 0.36$ to 0.51) connections of the index of tone of all arteries, tone of arteries of large diameter and tone of arteries of medium and small diameter with a third of the circumferential body sizes, most of the pelvic diameter and muscular component of the body mass by the AIN method, as well as the inverse, mostly reliable, mean strength ($r = -0.37$ to -0.41) connections of the artery tone ratio with the third of the indexes of the TSFF and the endo- and mesomorphic components of the somatotype. Attention is drawn to the lack of reliable and average strength false correlations of amplitude indices with total body sizes, the parameters of the width of distal epiphyses of long limb bones and components of the somatotype; as well as time and derivative indicators - with total and longitudinal dimensions of the body. In the analysis of correlations of indices with rheoencephalogram with anthropo-somatotypological indicators in practically healthy young women of the middle intermediate somatotype among all groups of indicators of cerebral blood circulation for the derived indicators, the greatest number of reliable and average strength connections mainly found with body diameters (21.9%), components somatotype (16.7%), cephalometric indices (12.6%), girths of the body (11.6%), and components of the body composition (9.4%). For amplitudes indexes, the highest percentage of connections with cephalometric indices (14.3%), components of body composition (10.0%), body length (8.0%) and body diameters (7.5%) were established; and for time indicators - with TSFF (11.0%),

with the circumferential dimensions of the body (10.7%), the width of distal epiphyses of long limb bones (10.0%).

Keywords: correlation, rheoencephalography, anthropometry, practically healthy young women, mean intermediate somatotype.

Introduction

The problem of vascular diseases of the brain continues to remain the most relevant in medicine, despite the achievements in their diagnosis and therapy, including the newest surgical methods of treatment. In fact, the study features rheoencephalography indicators and elimination of modified risk factors can reduce and/or prevent morbidity and mortality from this group of diseases [4, 5, 15, 26].

An integrated approach to assessing the clinical and morphofunctional status of a patient is important for improving the effectiveness of treatment and prevention of cerebral circulation disorders. In this direction, relevant research is being carried out in the field of clinical anthropology - a scientific direction devoted to the study of the features of functional indicators and the course of the disease, depending on the individual features of the human constitution [2, 5, 6].

It has been established that dyscirculatory cerebral impairment and stroke develop more often in persons of the hypersthetic type of the constitution, and the high frequency of complications (deep infertility) is associated with intermediate and asthenic somatotypes [13, 14]. In the studied nosological forms of cerebral stroke, there were obvious features of the structure of the human body. Patients with a cerebral infarction are more hypertensive and have a lower fatty component, whereas patients with intracerebral hemorrhage, on the contrary, are asthenized and with signs of excess fat removal. In patients with transient ischemic attacks, the bone and fat components are intermediate between the data of these groups of patients [27, 28].

Several researchers, intuitively understanding the necessity of following the anthropological direction to detect vascular insufficiency compared in their work performance of cerebral blood flow at clinically beneficial and in severe disease in individuals with different figure [3, 16]. Studies were conducted to determine hemodynamic characteristics in patients with clinical manifestations of cerebrovascular insufficiency, as well as with a tendency for chronic and progressive dyscirculatory disorders [17, 18, 19]. Also, patients were examined during their clinical health, without exacerbation of the disease. In this situation, the comparison of the values obtained with the norms received by healthy individuals would be well-grounded and correct [16, 19].

Thus, in the last decade several attempts were made to determine the norms of indicators of cerebral circulation in practically healthy individuals [29, 31]. An active study of the dependence of cerebral functional parameters on the constitutional status, age, region of residence of the subjects under study is urgently needed, which is extremely

necessary for the definition of risk groups in vascular diseases of the brain at the stage before the development of the disease [16, 19].

The *purpose* of the work is to establish the features of correlations of indicators of cerebral blood circulation with anthropo-somatotopological indicators of practically healthy young women of the middle intermediate somatotype.

Materials and methods

On the base of the research center of the National Pirogov Memorial Medical University, Vinnytsya conducted rheoencephalographic, anthropometric and somatotopological studies of 150 practically healthy urban young women aged from 16 to 20 years, in the third generation of residents of the Podillia region of Ukraine. Bioethics Committee of National Pirogov Memorial Medical University, Vinnytsya found that the research materials did not deny the basic bioethical norms of the Helsinki Declaration, the Council of Europe Convention on Human Rights and Biomedicine (1977), the relevant provisions of the WHO and the laws of Ukraine.

The rheoencephalography was performed using a computer diagnostic complex, which automatically determined the characteristic points on the curve, the main parameters of the rheoencephalogram and formed the conclusion about the state of the circulatory system of the investigated area [30].

Anthropometric study was carried out according to the scheme of V. V. Bunak [7]. Craniometry included a definition: the girth of the head (glabella), sagittal arc, the largest length and width of the head, the smallest head width, face width and mandible [1]. The somatotype is determined according to the method of J. Carter and B. Heath [8], and the components of the body composition are based on the method of J. Matiegka [20] and the American Institute of Nutrition (AIN) [24].

The analysis of the correlations of the results obtained in young women of the middle intermediate somatotype ($n = 30$) was performed using the Spearman method in the "STATISTICA 6.1" licensed statistical package.

Results

In young women of the middle intermediate somatotype the following reliable and average power unreliable correlations of cerebral circulation indicators with body structure and body size indicators in practically healthy... of indicators of cerebral blood circulation with anthropo-somatotopological parameters of the body are established:

basic impedance - reliable average force straight ($r = 0.50$ and $r = 0.37$) correlations with the interspinous and

interacetabulum size of the pelvis; reliable mean reciprocal force ($r = -0.52$) with the smallest head width, as well as unreliable mean force straight ($r = 0.30$ to 0.36) correlations with the greatest length of the head, waist circumference, hips, foot;

duration of the cardiac cycle - a reliable average force straight ($r = 0.41$) correlations with the hip circumference; reliable mean reciprocal force ($r = -0.43$ and $r = -0.39$) with interspinous and interacetabulum pelvic sizes, as well as an unreliable average force of the straight line ($r = 0.30$), with the width of the distal epiphysis of the shin;

the length of the ascending part - only the unreliable mean force of the straight ($r = 0.31$ to 0.35) correlations with the greatest head width, with the shoulder girth in a calm condition, with the girth of the thigh, the brush, with the anterior-posterior size of the chest; unreliable mean reciprocal force ($r = -0.36$) relationship with the thickness of the skin-fat fold (TSFF) on the front surface of the shoulder;

the duration of the downstream part - a reliable average reciprocal force ($r = -0.44$ and $r = -0.40$) correlations with interspinous and interacetabulum pelvic sizes, as well as unreliable mean force ($r = 0.32$ and $r = 0, 31$) correlations with the width of the distal epiphysis of the leg and the thigh girth;

the duration of the phase of rapid blood supply - a reliable average reciprocal force ($r = -0.37$ to -0.42) correlations with the TSFF on the front surface of the shoulder, under the shoulder blade, with the endomorphic component of the somatotype by Heath-Carter, with the fat mass by Matiegka, and also the unreliable mean force straight ($r = 0.33$ to 0.35) correlations with the circumference of the foot, with a transverse mid-thoracic size, interacetabulum size of the pelvis; unreliable mean reciprocal force ($r = -0.30$) correlations with TSFF on the back of the shoulder;

the duration of the phase of slow blood filling - the true mean power straight ($r = 0.39$) correlations with the anterior-posterior size of the chest, and also the unreliable mean power straight ($r = 0.30$ to 0.36) correlations with the largest width of the head, the girth of the thigh, the brush, with the TSFF on the thigh;

the amplitude of the systolic wave - only an unreliable mean reciprocal force ($r = -0.33$) correlations with the TSFF on the back of the shoulder;

the amplitude of notch - only an unreliable mean of direct force ($r = 0.32$ and $r = 0.30$) correlations with the largest length and sagittal arc of the head;

the amplitude of the diastolic wave - only the unreliable mean force of the straight line ($r = 0.30$ to 0.34) correlations with the sagittal arc of the head, the height of the finger point, with the anterior-posterior size of the chest; unreliable mean reciprocal force ($r = -0.31$) correlations with TSFF on the back of the shoulder;

the amplitude of the phase of rapid blood filling - only the unreliable mean force of the straight line ($r = 0,30$ in all cases), the correlations with the height of the finger point,

with muscle mass by Matiegka and by AIN; unreliable mean reciprocal force ($r = -0,32$) correlations with TSFF on the back of the shoulder;

dicrotic index - only unreliable mean reciprocal force ($r = -0.32$ and $r = -0.30$), correlations with interspinous and interacetabulum pelvis;

diastolic index - a reliable average reverse force ($r = -0.37$) relationship with the interspinous size of the pelvis and an inadequate mean reciprocal strength ($r = -0.31$) relationship with the pelvic interacetabulum size;

the average speed of the phase of rapid blood filling - only an unreliable mean reciprocal force ($r = -0.36$) with the girth of hand brush;

the average speed of the phase of slow blood filling - only an unreliable average reverse force ($r = -0.30$) relationship with the brush's girth;

the indicator of the total arterial tone - reliable average strength straight correlations ($r = 0.36$ to 0.48) with the head girth, the shoulder in a tense and restful state, with an intraluminal and intervertebral pelvic size, the muscle mass determined by the formula AIN; the true mean power inverse ($r = -0.38$) correlations with the TSFF on the back of the shoulder, as well as the unreliable mean force of the straight line ($r = 0.33$ to 0.36) correlations with the largest head width, with the girth forearms in the upper third, with the girth of the hips and the interspinous size of the pelvis;

the indicator of the tone of the arteries of large diameter - the reliable average strength of the straight line ($r = 0.43$ and $r = 0.39$), the correlations with the interstitial and intervertebral pelvic size, as well as the unreliable average force of the straight ($r =$ from 0.30 to 0.35) correlations with interspinous pelvis size, with an ectomorphic component of the somatotype by Heath-Carter and the muscle mass determined by the AIN formula; unreliable mean reciprocal force ($r = -0.30$) correlations with the endomorphic component of the somatotype according to Heath-Carter;

the indicator of the tone of the arteries of medium and small diameter - the true average strength of the straight line ($r = 0.37$ to 0.51), the correlations with the girth and the greatest head width, the shoulder girth in a tense and calm condition, the forearm in the upper third, with the girth of neck, intraspinal pelvis size, muscle mass, determined by the formula AIN; a reliable average reciprocal force ($r = -0.36$) with TSFF on the forearm, and also an unreliable mean force of the straight line ($r = 0.30$ to 0.36) with the greatest length of the head, waist circumference and thighs, interspinous and interacetabulum pelvis sizes, with TSFF on the abdomen; unreliable mean reciprocal force ($r = -0.36$ and $r = -0.33$) correlation with the width of the distal epiphysis of the shin and TSFF on the back of the shoulder;

an indicator of the ratio of tone of arteries of different diameters - a reliable average reciprocal force ($r = -0.37$ to -0.40), correlations with the anterior-posterior size of the chest, with TSFF on the side, thigh, tibia, and also an unreliable average strength direct ($r = 0.33$) relationship with the width of the mandible; unreliable mean reciprocal

force ($r = -0.32$ to -0.35) with the chest girth on the inspiration and in a calm state, with the endomorphic and mesomorphic component of the somatotype by Heath-Carter.

Discussion

In numerous contemporary publications, calls are made for the need to modernize the existing system of standards for functional indicators of cerebral circulation [21, 25]. This need is due, above all, to the fact that the use of traditional diagnostic approaches to the evaluation of rheoencephalographic parameters is not focused on a particular patient, because it does not take into account its somatotypological features. The problem of normalization of hemodynamic parameters cannot be exhausted taking into account only sex, age and functional state of the human body. Representatives of specific somatotypes have not only features of physique, size and form of the body, but also specificity of functional indicators [22, 23, 25, 26].

In our previous studies of practically healthy young women, it was proved that the constitutional meanings of the parameters closely correlate with the time, amplitude and derivative parameters of the rheoencephalography and have certain qualitative and quantitative differences among representatives of different somatotypes [9-12].

In the analysis of the peculiarities of reliable and average strength of inadequate correlations of indicators of cerebral circulation with anthropo-somatotypological parameters of the body of practically healthy young women of the middle intermediate somatotype, we established the following multiple correlations: direct, mostly false, average strength ($r = 0.31$ to 0.36) correlations of most time indices (with the exception of the time of rapid blood filling) with the girth of the thigh and the time of rapid blood filling with a third of the indices of the TSFF (predominantly the upper limb), the endomorphic component of somatotype and body fat mass component by Matiegka method; direct, mostly reliable, average strength ($r = 0.36$ to 0.51) correlations of the index of tone of all arteries, tone of arteries of large diameter and tone of arteries of medium and small diameter with a third of the circumferential body dimensions (mainly of the upper limb, with the exception of tone of arteries of large diameter), most of the pelvic diameter and muscle mass component of the body by the AIN method, as well as inverse, mostly reliable, mean strength ($r = -0.37$ to -0.41) correlations of the artery tone ratio with a third of indices of the TSFF (mainly the lower limb) and the endo- and mesomorphic components of the somatotype. Attention is drawn to the absence of reliable and average force of false correlations: amplitude indices with total body size, indicators of the width of distal epiphyses of long tubular bones of the limbs and components of the somatotype; time indicators - with total and longitudinal body sizes; derivative indicators - with total and longitudinal dimensions of the body.

A quantitative analysis of correlations of cerebral blood flow with anthropo-somatotypological parameters of the

body of practically healthy young women of the mean intermediate somatotype revealed the following distribution among amplitude, time and derivative of the rheoencephalography: 18 out of 290 possible correlations (6.2%) with amplitude indices (of which, 0.7% of the reliable direct average forces, 4.1% of the false direct average forces, 0.4% of the true reciprocal average strength, 1.0% of the unreliable reciprocal average strength); 27 out of 290 possible (9.4%) with time indicators (of which, 0.7% of the reliable direct average forces, 5.2% of false direct average forces, 2.8% of the reliable mean reciprocal force, 0.7% of false reciprocal average strength); 49 out of 464 possible (10.6%) with derivatives (of which, 3.4% of the direct averages, 3.0% of unreliable direct mean forces, 1.5% of the true reciprocal average forces, 2.7% of false reciprocal average strength).

Quantitative analysis of correlations of cerebral blood flow with anthropo-somatotypological parameters of the body of practically healthy young women of the middle intermediate somatotype revealed the following distribution among the anthropo-somatotypological parameters: with amplitude data - cephalometric indices (5 - 14.3% of the total number of these indicators, of which 11.4% with false direct average forces, 2.9% of the true reciprocal average strength); longitudinal body dimensions (2 - 8.0% of the total number of these indicators; all unreliable direct mean forces); body diameters (3 - 7.5% of the total number of these indicators, of which 5.0% of reliable direct average forces, 2.5% of unreliable direct average forces); girth size of the body (3 - 4.0% of the total number of indicators, all unreliable direct average strength); TSFF (3 - 6.6% of the total number of indicators, all unreliable reciprocal average strength); components of body mass index (2 - 10.0% of the total number of these indicators; all unreliable direct average forces). With time indicators - cephalometric indicators (2 - 5.7% of the total number of indicators, all unreliable direct average strength); the width of distal epiphyses of long limb bones (2 - 10.0% of the total number of these indicators; all unreliable direct mean forces); body diameters (8 - 20.0% of the total number of these indicators, of which 2.5% of reliable direct average forces, 7.5% of unreliable direct average forces, 10.0% of the true reciprocal average strength); girths of the body (8 - 10.7% of the total number of these indicators, of which 1.3% of the reliable direct average strength, 9.4% of the false direct middle forces); TSFF (5 - 11.0% of the total number of these indicators, of which 2.2% of false direct average forces, 4.4% of the true reciprocal average strength, 4.4% of the unreliable reciprocal average strength); components of the somatotype (1 - 6.7% of the total number of these indicators; all reliable reciprocal average forces); components of body weight (1 - 5.0% of the total number of these indicators, all reliable reciprocal average strength). With derivative indicators - cephalometric indices (6 - 12.6% of the total number of these indicators, of which, 6.3% of reliable direct average forces, 6.3% of false direct average forces); width

of distal epiphyses of long limb bones (1 - 3.1% of the total number of these indicators; all unreliable reciprocal mean forces); body diameters (14 - 21.9% of the total number of these indicators, of which 7.9% are reliable direct average forces, 6.2% of false direct average forces, 3.1% of the true reciprocal average strength, 4.7% of the unreliable reciprocal average force); girths of the body (14 - 11.6% of the total number of these indicators, of which 5.0% of the reliable direct average strength, 3.3% of the false direct average strength, 3.3% of the false reciprocal average strength); TSFF (7 - 9.7% of the total number of these indicators, of which 1.4% are false direct average forces, 6.9% of the true reciprocal average strength, 1.4% of the false reciprocal average strength); components of the somatotype (4 - 16.7% of the total number of these indicators, of which 4.2% of the unreliable direct average strength, 12.5% of the unreliable reciprocal average strength); the components of the body composition (3 - 9.4% of the total number of these indicators, of which, 6.3% of the reliable direct average strength, 3.1% of the false direct average strength).

Considering the constitutional approach legitimate, which leads to the correct strategy for the prevention and treatment of cerebral circulation disorders, the final result of our study was the ability to prove in our own studies that

correlations of indicators of cerebral circulation with body structure and body size of practically healthy young women of the middle intermediate somatotype exist and have significant differences in comparison with representatives of other somatotypes.

Conclusions

1. In the practically healthy young women of the middle intermediate somatotype, among all groups of indicators of cerebral circulation for the derived indicators, the greatest number of reliable and average strength inaccurate relationships with anthropomorphic somatotypological indicators are established, mainly with body diameters (21.9%), components of somatotype (16.7%), cephalometric indices (12.6%), circumflex body dimensions (11.6%), and components of body weight (9.4%).

2. For the amplitude parameters, the greatest number of reliable and average strength of false correlations is established with cephalometric indices (14.3%), indicators of the component composition of body weight (10.0%), body length (8.0%) and body diameters (7.5%); and for time indicators - with TSFF (11.0%), with the circumferential dimensions of the body (10.7%), the width of distal epiphyses of long limb bones (10.0%).

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ЗВ'ЯЗКИ ПОКАЗНИКІВ ЦЕРЕБРАЛЬНОГО КРОВООБІГУ З ПОКАЗНИКАМИ БУДОВИ І РОЗМІРІВ ТІЛА ПРАКТИЧНО ЗДОРОВИХ ДІВЧАТ СЕРЕДНЬОГО ПРОМІЖНОГО СОМАТОТИПУ

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Згідно сучасної наукової літератури, для визначення груп ризику при судинних захворюваннях мозку ще на донозологічній стадії, необхідно вивчити залежність церебральних функціональних показників населення від їх конституціонального статусу, віку, регіону проживання. Мета дослідження - встановити особливості кореляцій показників церебрального кровообігу з антропо-соматотипологічними показниками практично здорових дівчат середнього проміжного соматотипу. На базі науково-дослідного центру Вінницького національного медичного університету ім. М. І. Пирогова проведені комплексні дослідження 30 практично здорових міських дівчат середнього проміжного соматотипу, у третьому поколінні мешканців Подільського регіону України. Усім дівчатам проведено реоенцефалографію за допомогою комп'ютерного діагностичного комплексу; антропометричне дослідження за схемою В. В. Бунака; краніометрію; визначення соматотипу за методикою J. Carter і V. Heath та показників компонентного складу маси тіла за методикою J. Matiegka та Американського інституту харчування. Аналіз кореляцій отриманих результатів проводили з використанням методу Спірмена в ліцензійному статистичному пакеті "STATISTICA 6.1". У практично здорових дівчат середнього проміжного соматотипу встановлені наступні множинні зв'язки показників церебрального кровообігу з антропо-соматотипологічними параметрами тіла: прямі, переважно недостовірні, середньої сили ($r = \text{від } 0,31 \text{ до } 0,36$) зв'язки більшості часових показників з обхватом стегна та часу швидкого кровонаповнення з третьою показників товщини шкірно-жирових складок (ТШЖС), ендоморфним компонентом соматотипу й жировим компонентом маси тіла за методом Матейко; прямі, переважно достовірні, середньої сили ($r = \text{від } 0,36 \text{ до } 0,51$) зв'язки показника тонусу всіх артерій, тонусу артерій великого діаметру й тонусу артерій середнього та мілкового діаметру з третьою обхватних розмірів тіла, більшістю діаметрів тазу та м'язовим компонентом маси тіла за методом АІХ, а також зворотні, переважно достовірні, середньої сили ($r = \text{від } -0,37 \text{ до } -0,41$) зв'язки показника співвідношення тонусу артерій з третьою показників ТШЖС та ендо- й мезоморфним компонентами соматотипу. Привертає увагу відсутність достовірних і середньої сили недостовірних кореляцій амплітудних показників із тотальними розмірами тіла, показниками ширини дистальних епіфізів довгих трубчастих кісток кінцівок і компонентами соматотипу; а також часових і похідних показників - із тотальними й поздовжніми розмірами тіла. При аналізі кореляцій показників реоенцефалограми з антропо-соматотипологічними показниками у практично здорових дівчат середнього проміжного соматотипу серед усіх груп показників церебрального кровообігу для похідних показників встановлено найбільшу кількість достовірних і середньої сили недостовірних зв'язків, переважно з діаметрами тіла (21,9%), компонентами соматотипу (16,7%), кефалометричними показниками (12,6%), обхватними розмірами тіла (11,6%) та показниками компонентного складу маси тіла (9,4%). Для амплітудних показників встановлено найбільший відсоток зв'язків із кефалометричними показниками (14,3%), показниками компонентного складу маси тіла (10,0%), поздовжніми розмірами тіла (8,0%) та діаметрами тіла (7,5%); а для часових показників - із ТШЖС (11,0%), обхватними розмірами тіла (10,7%), шириною дистальних епіфізів довгих трубчастих кісток кінцівок (10,0%).

Ключові слова: кореляції, реоенцефалографія, антропометрія, практично здорові дівчата, середній проміжний соматотип.

СВЯЗИ ПОКАЗАТЕЛЕЙ МОЗГОВОГО КРОВООБРАЩЕННЯ С ПОКАЗАТЕЛЯМИ СТРОЕНИЯ И РАЗМЕРОВ ТЕЛА ПРАКТИЧЕСКИ ЗДОРОВЫХ ДЕВУШЕК СРЕДНЕГО ПРОМЕЖУТОЧНОГО СОМАТОТИПА

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Согласно современной научной литературы, для определения групп риска при сосудистых заболеваниях мозга еще на донозологической стадии, необходимо изучить зависимость церебральных функциональных показателей населения от их

конституционального статуса, возраста, региона проживания. Цель исследования - установить особенности корреляций показателей мозгового кровообращения с антропо-соматотипологическими показателями практически здоровых девушек среднего промежуточного соматотипа. На базе научно-исследовательского центра Винницкого национального медицинского университета им. Н. И. Пирогова проведены комплексные исследования 30 практически здоровых городских девушек среднего промежуточного соматотипа, в третьем поколении жителей Подольского региона Украины. Всем девушкам проведения реоэнцефалографию с помощью компьютерного диагностического комплекса; антропометрическое исследование по схеме В. В. Бунака; краниометрию; определения соматотипа по методике J. Carter и B. Heath и показателей компонентного состава массы тела по методике J. Matiegka и Американского института питания. Анализ корреляций полученных результатов проводили с использованием метода Спирмена в лицензионном статистическом пакете "STATISTICA 6.1". У практически здоровых девушек среднего промежуточного соматотипа установлены следующие множественные связи показателей мозгового кровообращения с антропо-соматотипологическими параметрами тела: прямые, преимущественно недостоверные, средней силы ($r = \text{от } 0,31 \text{ до } 0,36$) связи большинства временных показателей с охватом бедра и времени быстрого кровенаполнения с третью показателей толщины кожно-жировых складок (ТКЖС), эндоморфным компонентом соматотипа и жировым компонентом массы тела по методу Матейко; прямые, преимущественно достоверные, средней силы ($r = \text{от } 0,36 \text{ до } 0,51$) связи показателя тонуса всех артерий, тонуса артерий большого диаметра и тонуса артерий среднего и мелкого диаметра с третью обхватных размеров тела, большинством диаметров таза и мышечным компонентом массы тела по методу АИП, а также обратные, преимущественно достоверные, средней силы ($r = \text{от } -0,37 \text{ до } -0,41$) связи показателя соотношения тонуса артерий с третью показателей ТКЖС и эндо- и мезоморфным компонентами соматотипа. Привлекает внимание отсутствие достоверных и средней силы недостоверных корреляций амплитудных показателей с тотальными размерами тела, показателями ширины дистальных эпифизов длинных трубчатых костей конечностей и компонентами соматотипа; а также временных и производных показателей - с тотальными и продольными размерами тела. При анализе корреляций показателей реоэнцефалограммы с антропо-соматотипологическими показателями у практически здоровых девушек среднего промежуточного соматотипа всех групп показателей мозгового кровообращения для производных показателей установлено наибольшее количество достоверных и средней силы недостоверных связей, преимущественно с диаметрами тела (21,9%), компонентами соматотипа (16,7%), кефалометрическими показателями (12,6%), обхватными размерами тела (11,6%) и показателями компонентного состава массы тела (9,4%). Для амплитудных показателей установлен самый большой процент связей с кефалометрическими показателями (14,3%), показателями компонентного состава массы тела (10,0%), продольными размерами тела (8,0%) и диаметрами тела (7,5%); а для временных показателей - ТКЖС (11,0%), обхватными размерами тела (10,7%), шириной дистальных эпифизов длинных трубчатых костей конечностей (10,0%).

Ключевые слова: корреляции, реоэнцефалография, антропометрия, практически здоровые девушки, средний промежуточный соматотип.
