

После полимеризации регистрационных материалов осуществляли определение биометрического отклонения меток от комплементарного положения в исследуемых участках зубных рядов. Обнаружено, что у пациентов с интактными зубными рядами при клиническом и лабораторном исследовании при использовании регистрационного материала Футар Д наблюдается меньший оптимум расхождений показателей БОМ, что указывает на лучшую комплементарность при регистрации максимальной интеркуспидации данного материала сравнительно с Консифлексом и металлизированным воском.

Ключевые слова: регистрационный материал, максимальная интеркуспидация, интактные зубные ряды.

Стаття надійшла 4.12.18 р.

polymerization of registration materials, determination of biometric deviation of markers from complementary position in the regions of dentitions under study was performed. Clinical and laboratory research with the use of Futar D registration materials in patients with intact dentitions demonstrated lower optimum of differences between BDM indices, indicating a better complementarity during recording the maximum intersuspation of this material in comparison with Consiflex and metalized wax.

Key words: bite registration material, maximum intersuspation registration, intact dentitions.

Рецензент Аветіков Д.С.

DOI 10.26724/2079-8334-2019-3-69-55-59

UDC 616-071.2:613.4:611.9:613.956:575.191

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INDICATORS OF THIGH RHEOGRAM IN PRACTICALLY HEALTHY YOUNG MEN AND YOUNG WOMEN OF DIFFERENT SOMATOTYPES

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Correct estimation of rheovasographic indicators is impossible without taking into account the age, gender and somatotype of the subjects. The purpose of the study is to establish in practically healthy young women and young men of different somatotypes, inhabitants of Podillia region of Ukraine, features of indicators of thigh rheogram. In 108 healthy young women and 103 young men, in the third generation of urban adolescents of the Podillia region of Ukraine, the rheographic parameters of the thigh were determined. Anthropometric examination was performed according to the scheme of V.V. Bunak (1941). The mathematical scheme of J. Carter and B. Heath (1990) was used to evaluate the somatotype of adolescents. The statistical processing of the obtained results was carried out in the "Statistica 5.5" license package using non-parametric methods of estimating the results. The most pronounced differences in thigh rheogram indices in young women of different somatotypes are set for temporal (higher values in the representatives of the mesomorphic somatotype of the ascending part and slow blood flow of rheogram) and derivatives (smaller values in the representatives of the mesomorphic somatotype of the average speed of fast and slow blood type values – the tone of all the arteries and the tone of the arteries of medium and small diameter) indicators, and young men – for amplitude measurements (smaller values in the representatives of the mesomorphic somatotype). In addition, in young women of different somatotypes, most of the amplitude and almost half of the derived thigh rheogram indicators are greater than in young men of the respective somatotypes; in young men of different somatotypes – more than half of the time (except for slow blood flow of rheogram) indicators.

Key words: indicators of thigh rheogram, practically healthy young men and young women, somatotype, sexual differences.

The study is initiative.

Peripheral vascular disease is a common pathology of the cardiovascular system that affects people of all ages. Factors that affect the risk of these diseases are overweight, the presence of bad habits, comorbid conditions such as atherosclerosis, diabetes and so on. Also important is the state of the body's blood. One of the current problems of medicine is the vulnerability to disorders of the cardiovascular system of the peripheral vessels of the lower extremities, which can end with amputation of the lower extremity and, accordingly, a person's disability. In the United States, the prevalence of lower extremity amputations as a result of cardiovascular disorders varies from 1 to 27 per 10,000 people, and the total cost of care for these patients is over 3 billion dollars [5]. A similar study by British scientists found that the level of lower limb amputation in the United Kingdom ranges from 5.8 to 31 per 1 million people [11].

One of the main ways of preventing disability of the population is to conduct early examinations – clinical, laboratory and instrumental. One of the reliable tools that will allow to evaluate the blood flow in peripheral vessels without invasive intervention is rheovasographic examination [1]. However, it should be understood that like most other instrumental methods of research, this method has a significant drawback – the lack of normative indicators for persons of different sex, age, race, body, etc. [6].

A group of Chinese researchers [8] identified the ethnic features of cerebral hemodynamics in the study of such indicators as total cerebral blood flow, total cerebral vascular resistance, total cerebral oxygen delivery among representatives of the Tibetan nationality and the Han ethnic group.

Morris A.A. et al. [10] investigated the features of peripheral hemodynamics in 385 black and 470 white adults of mature age using digital pulse tonometry (EndoPAT). The results of the analysis revealed impaired microvascular vasodilator function, greater stiffness and reflection of the arterial wave in the representatives of

the black race, compared with the representatives of the white race. Numerous studies in Ukraine and around the world have already shown that the above "variables" significantly affect the norms of a particular method of study, including rheovasography in the study of the lower extremities [3, 12, 14, 15].

Thus, Moroz V.M. and coauthors [9] investigated the amplitude, temporal and derivative indicators of shin rheogram in volleyball players, athletes and fighters adolescents (17-21 years) and persons not involved in the sport of mesomorphic somatotype. Statistical analysis of the obtained data showed significant differences of the studied indicators between all studied groups of persons and that sports specialization of persons to a greater extent than the constitutional type led to changes in blood flow in the lower leg.

Polish scientists [13] examined 60 women and 40 men to identify age, sex and other features of peripheral hemodynamics of the lower extremities. The analysis of the data obtained revealed no significant difference between the hemodynamics of the left and right lower extremities in both men and women, but correlations were found between hemodynamics and component of body composition in women.

The purpose of the study was to establish in practically healthy young women and young men of different somatotypes, residents of Podillia region of Ukraine, features of thigh rheogram indicators.

Materials and methods. After preliminary examinations at the research center of National Pirogov Memorial Medical University, Vinnytsya were selected 103 practically healthy young men aged 13 to 16 years and 108 young women aged 12 to 15 years, in the third generation of urban residents of Podillia region of Ukraine. With the voluntary consent of young men and young women and their parents, a rheovasographic and anthropological survey was conducted on all adolescents.

The rheographic parameters of thigh were determined using a cardiology computer diagnostic complex. For registration, tape-type rheovasographic electrodes of the roulette type were applied, which were superimposed on the edges of the studied limb sections. The study was conducted in the horizontal position of the patient after 10-15 minutes of rest on an empty stomach in a room with an air temperature of 20-22 °C. Before each measurement, the device performed an automatic calibration to control the quality of the electrode overlay. Measurement current 1.8 mA, current frequency 80 kHz. For analysis, rheogram records of 15 s duration were used, followed by program averaging of all oscillation periods. As a result of rheogram processing, the characteristic points on the curve were automatically determined and the main indicators were determined.

Anthropometry was performed according to the scheme of V.V. Bunak [2]. The mathematical scheme of J. Carter and B. Heath was used to estimate the somatotype [4].

The statistical processing of the obtained results was carried out in the license package "STATISTICA 5.5" using nonparametric methods of estimation of results.

Results of the study and their discussion. Among the amplitude indicators of thigh rheogram in young men of different somatotypes, the following changes were observed: significantly ($p<0.05-0.01$) lower values of baseline impedance and all amplitude indices in mesomorphs than in ectomorphs; significantly ($p<0.05-0.01$) smaller values of systolic and diastolic wave amplitude and rapid blood flow rheogram, as well as a tendency for smaller values ($p=0.069$) of incisure rheogram amplitude in mesomorphs than in ecto-mesomorphs (table 1). In young women, the amplitude indicators of thigh rheogram were only significantly lower ($p<0.01$) than the rheogram fast filling amplitude in mesomorphs than in ectomorphs (table 1).

When comparing the amplitude indicators of thigh rheogram between young women and young men of the respective somatotypes, significantly higher values of the following indicators were established: base impedance ($p<0.001$), systolic wave rheogram amplitude ($p<0.001$), incisure rheogram amplitude ($p<0.001$) and amplitude diastolic rheogram wave ($p<0.01-0.001$) in young women of different somatotypes; fast blood filling amplitude of rheogram ($p<0.05-0.01$) in young women mesomorphs and ectomorphs (table 1).

Among the temporal indicators of thigh rheogram in young women of different somatotypes, the following changes were observed: significantly greater or a slight tendency to higher values of the ascending part of the rheogram ($p<0.01$ and $p=0.074$) and the time of slow blood flow rheogram ($p<0.05$ and $p<0.001$) in mesomorphs than in representatives of ectomorphic and ecto-mesomorphic somatotypes (table 1). There were no significant differences between the young men of different somatotypes, or the trend of differences in temporal indicators of thigh rheogram (table 1).

When comparing the temporal indicators of thigh rheogram between young women and young men of the respective somatotypes were found significantly greater, or the tendency to higher values of the following indicators: the duration of the cardiac cycle ($p<0.01-0.001$) and the time of the descending part of the rheogram ($p<0.01-0.001$) in young men of different somatotypes; fast blood flow time of rheogram ($p<0.05$ and $p=0.054$) in young men ectomorphs and ecto-mesomorphs; ascending time of rheogram ($p=0.081$) in young women mesomorphs; slow blood flow time of rheogram ($p<0.05$ and $p<0.01$) in young women mesomorphs and ectomorphs (table 1).

Among the derived indicators of thigh rheogram in young women of different somatotypes, the following changes were observed: significantly ($p < 0.05-0.01$) lower values of mean rate of fast and slow blood flow of rheogram in mesomorphs than in young women of other somatotypes; significantly ($p < 0.01$) greater values of the tone of all arteries and the tone of the arteries of medium and small diameter in mesomorphs than in young women ectomorphs; significantly ($p < 0.05$) smaller values of the ratio of arterial tone in mesomorphs than in young women ectomorphs (table 1). The following changes in the derived indicators of thigh rheograms were established in young men: significantly ($p < 0.01-0.001$) smaller, or a tendency for smaller values ($p = 0.059$) of the average rate of fast and slow blood flow in mesomorphs than in young men of other somatotypes (table 1).

When comparing the derived indicators of thigh rheogram between young women and young men of the respective somatotypes, significantly higher values of the following indicators were established: dicrotic index ($p < 0.05$) in young women mesomorphs and ectomorphs; indicators of the average speed of fast ($p < 0.01-0.001$) and slow blood flow of rheogram ($p < 0.001$), the tone of all the arteries ($p < 0.05-0.001$) and the tone of the arteries of medium and small diameter ($p < 0.01-0.001$) in young women of different somatotypes; ratio of the tone of the arteries ($p < 0.05$) in young men of different somatotypes (table 1).

Table 1

Changes of thigh rheogram indices in adolescents of different somatotypes

Indicators	Young women			Young men		
	mes	ec	ec/mes	mes	ec	ec/mes
B_Z (Ohm)				▼	▲	
B_H1 (Ohm)				▼	▲	▲
B_H2 (Ohm)				▼↓	▲	↑
B_H3 (Ohm)				▼	▲	▲
B_H4 (Ohm)	▼	▲		▼	▲	▲
B_C (s)						
B_A (s)	▲↑	▼	↓			
B_B (s)						
B_A1 (s)						
B_A2 (s)	▲	▼	▼			
B_H2H1 (%)						
B_H3H1 (%)						
B_H4A1 (Ohm/s)	▼	▲	▲	▼↓	▲	↑
B_H1H4A2 (Ohm/s)	▼	▲	▲	▼	▲	▲
B_AC (%)	▲	▼				
B_A1C (%)						
B_A2C (%)	▲	▼				
B_A1A2 (%)	▼	▲				

Notes: mes – mesomorphic somatotype; ec – ectomorphic somatotype; ec/mes – ecto-mesomorphic, or meso-ectomorphic somatotype; ▲ or ▼ – significant differences between the respective indicators in the groups of young men or young women; ↑ or ↓ – the value of the relevant indicators within the respective groups of young men or young women tends to higher or lower values; ↑ or ↓ – the value of the relevant indicators within the respective groups of young men or young women have a slight tendency to higher or lower values; ■ – significant differences in the performance of the respective somatotypes between young men or young women (higher rates are noted); ■ – trends in the differences between young men or young women in the corresponding somatotypes (higher rates are noted); B_ – rheographic indicators of the thigh; Z – basic impedance; _H1 – amplitude of the systolic wave; _H2 – incisure amplitude; _H3 – amplitude of the diastolic wave; _H4 – the amplitude of rapid blood flow; _C – duration of the heart cycle; _A – time of the ascending part; _B – time of the downward part; _A1 – time of fast blood filling; _A2 – time of slow blood flow; _H2H1 – dicrotic index; _H3H1 – diastolic index; _H4A1 – average speed of rapid blood flow; _H1H4A2 – the average speed of slow blood flow; _AC – index of tone of all arteries; _A1C – index of tone of arteries of large diameter; _A2C – index of tone of arteries of medium and shallow diameter; _A1A2 – ratio of arteries tones.

Comparing the results of the thigh rheogram with the results obtained by us from adolescents of different somatotypes on the shin [6], the following differences draw attention:

the absolute majority of the differences in the amplitude rheographic indices on the thigh are established between young men of different somatotypes and on the shin - between young women of different somatotypes;

discrepancies in the temporal rheographic indices on the thigh were found only between young women of different somatotypes, and on the shin between between young women and young men of different somatotypes;

on the thigh, in contrast to the shin, there are differences in vascular tone between young men of mesomorphic and ectomorphic somatotypes;

on the thigh more pronounced manifestations of sexual dimorphism of amplitude and derivatives than on the shin.

The results obtained confirm the need for a full and objective analysis of the hemodynamics of a healthy population of Ukraine, taking into account the age, sex and features of the constitution.

Conclusions

1. It is established that in young women of mesomorphic somatotype the ascending time and slow blood flow of thigh rheogram have higher values, and the average rate of fast and slow blood flow of rheogram are smaller than those of ecto- and ecto-mesomorphic somatotypes. In addition, in young women of the mesomorphic somatotype, the fasting blood amplitude and the arterial tone ratio are smaller, and the average and small diameter arterial tone and tone are larger than those of the ectomorphic somatotype.

2. In the young men of the mesomorphic somatotype, smaller values of all the amplitude indices of the thigh rheogram and the average rate of fast and slow blood flow of the rheogram are established than in the representatives of the ecto- and ecto-mesomorphic somatotypes.

3. Expressed manifestations of sexual dimorphism of thigh rheogram indices between adolescents of the respective somatotypes are established: most amplitude, almost half of the derivative indices are significantly greater in young women of different somatotypes, and more than half of temporal indices – in young men of different somatotypes (except for the time of slow blood filling of rheogram).

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Реферати

**ПОКАЗНИКИ РЕОГРАМИ СТЕГНА
У ПРАКТИЧНО ЗДОРОВИХ ХЛОПЧИКІВ
І ДІВЧАТОК РІЗНИХ СОМАТОТИПІВ**

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Коректна оцінка реовазографічних показників неможлива без урахування віку, статі та соматотипу досліджуваних осіб. Мета дослідження – встановити у практично здорових дівчаток і хлопчиків різних соматотипів, мешканців Подільського регіону України, особливості показників реограми стегна. У 108 практично здорових дівчаток і 103 хлопчиків, у третьому поколінні міських підлітків Подільського регіону України, визначені реографічні параметри стегна. Антропометричне обстеження проведено згідно схеми В. В. Бунака (1941). Для оцінки соматотипу

**ПОКАЗАТЕЛИ РЕОГРАММИ БЕДРА
У ПРАКТИЧЕСКИ ЗДОРОВЫХ МАЛЬЧИКОВ
И ДЕВОЧЕК РАЗНЫХ СОМАТОТИПОВ**

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Корректная оценка реовазографических показателей невозможна без учета возраста, пола и соматотипа исследуемых лиц. Цель исследования – установить у практически здоровых девочек и мальчиков разных соматотипов, жителей Подольского региона Украины, особенности показателей реограммы бедра. В 108 практически здоровых девочек и 103 мальчиков, в третьем поколении городских подростков Подольского региона Украины, определены реографические параметры бедра. Антропометрическое обследование проведено согласно схеме В. В. Бунака (1941). Для оценки соматотипа

підлітків використовувалась математична схема J. Carter і V. Neath (1990). Статистична обробка отриманих результатів проведена в ліцензійному пакеті "Statistica 5.5" з використанням непараметричних методів оцінки результатів. Найбільш виражені відмінності показників реограми стегна у дівчаток різних соматотипів встановлені для часових (більші значення у представниць мезоморфного соматотипу часу висхідної частини й повільного кровонаповнення реограми) і похідних (менші значення у представниць мезоморфного соматотипу середньої швидкості швидкого й повільного кровонаповнення і показника співвідношення тонусів артерій та більші значення – показника тонузу всіх артерій і тонузу артерій середнього та м'якого діаметру) показників, а у хлопчиків – для амплітудних показників (менші значення у представників мезоморфного соматотипу). Крім того, у дівчаток різних соматотипів більшість амплітудних і майже половина похідних показників реограми стегна більша, ніж у хлопчиків відповідних соматотипів; а у хлопчиків різних соматотипів – більш ніж половина часових (за винятком часу повільного кровонаповнення реограми) показників.

Ключові слова: показники реограми стегна, практично здорові дівчатка та хлопчики, соматотип, статеві розбіжності.

Стаття надійшла 8.11.18 р.

подростков использовалась математическая схема J. Carter и V. Neath (1990). Статистическая обработка полученных результатов проведена в лицензионном пакете "Statistica 5.5" с использованием непараметрических методов оценки результатов. Наиболее выраженные различия показателей реограммы бедра у девочек разных соматотипов установлены для временных (большие значения у представительниц мезоморфного соматотипа времени восходящей части и медленного кровенаполнения реограммы) и производных (меньшие значения у представительниц мезоморфного соматотипа средней скорости быстрого и медленного кровенаполнения и показателя соотношения тонуса артерий и большие значения – показателя тонуза всех артерий и тонуза артерий среднего и мелкого диаметра) показателей, а у мальчиков – для амплитудных показателей (меньшие значения у представителей мезоморфного соматотипа). Кроме того, у девочек разных соматотипов большинство амплитудных и почти половина производных показателей реограммы бедра больше, чем у мальчиков соответствующих соматотипов; а у мальчиков разных соматотипов – более половины временных (за исключением времени медленного кровенаполнения реограммы) показателей.

Ключевые слова: показатели реограммы бедра, практически здоровые девочки и мальчики, соматотип, половые различия.

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DOI 10.26724/2079-8334-2019-3-69-59-63

UDC 572.524.12/616.5-002/616.248/616.211-002

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QUANTITATIVE FEATURES OF FINGER DERMATOGLYPHICS AS MARKERS OF ATOPIC DERMATITIS, BRONCHIAL ASTHMA AND ALLERGIC RHINITIS

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Comorbidity of atopic diseases has become the basis for the application of the method of dermatoglyphics to clarify the genetic nature of the "atopic march". The purpose of the study is to identify differences in the quantitative features of finger dermatoglyphics between patients with atopic dermatitis, allergic rhinitis and bronchial asthma. Primary indices of finger dermatoglyphics of patients with atopic dermatitis, allergic rhinitis and bronchial asthma of young men and young women are taken from the data bank of National Pirogov Memorial Medical University, Vinnytsya, and have been used in previous studies in comparison with almost healthy young men and young women. Imprints were obtained by the method of "printing ink" by Gladkova T.D. By the method of Cummins H. and Midlo Ch. dermatoglyphic study of 320 young men and young women with allergic rhinitis (n=69), bronchial asthma (n=108) and atopic dermatitis (n=143) was performed. The quantitative indices of finger dermatoglyphics were analyzed: finger ridge count, summary and total ridge count and delta index. Statistical processing of the results was carried out in the package "Statistica 6.1". It is established that the differences of quantitative finger dermatoglyphics indices between young men or young women with atopic dermatitis and allergic rhinitis cover respectively 0 % and 35.71 %, between patients with allergic rhinitis and bronchial asthma – 28.57 % and 42.86 %, respectively, patients with atopic dermatitis and bronchial asthma – 42.86 % and 100 % respectively. The results obtained determine the order of the "atopic march" development: atopic dermatitis or allergic rhinitis → bronchial asthma (in young men); atopic dermatitis → allergic rhinitis → bronchial asthma (in young women).

Key words: finger ridge count, summary, total ridge count, delta index, atopic dermatitis, bronchial asthma, allergic rhinitis.

The work is a fragment of the research project "Development of normative health criteria for different age and sex groups of the population", State registration No. 0109U005544.

One of the pressing problems for modern medicine is the spread of allergic diseases. A special place in this aspect belongs to the allergic march, which originates from infancy (during the termination of breastfeeding and formation of food allergies) and continues at school age with the formation of allergies to various household allergens [8]. One of the modern directions of medicine is the preventive direction, which is based on the prevention of the disease even before the beginning of its detection by adjusting lifestyle, eating, bad habits, etc. Various manifestations of a person's genetic potential (its constitution) can serve as an effective and easy to use marker [11]. N. Assad and others [2] found that body mass index is a stronger predictor of women's asthma than metabolic syndrome. Other obesity-related factors that are not part of the metabolic syndrome may play a role in the association of body mass index and asthma in women.