

BPS indexes in rest among 1st grade boys did not differ significantly between GP and GN, and among girls of GP they were reliably higher. Among boys of GP from the 2nd grade indexes of systolic BP (BPS) were reliably higher than that of GN. In the 3rd grade BPS was higher among girls of GN than of GP. Diastolic BP (BPS) in rest among pupils of GP was higher than of GN, except for the 3rd grade girls.

Local strain caused an increase in heart beat among all children differently. Thus, in the 1st grade a reliable increase in HR was registered under tension. In the 2nd and 3rd grade among boys of GN it was less obvious than among boys of GP. Among girls of the 1st group a greater increase in HR was registered under tension than among girls of GP group.

Reaction of BPS among children of GN group of the 2nd and 3rd grade against local tension was more obvious than among children of GP group. BPD indexes under local tension among all children of GP were significantly higher, except for girls of the 3rd grade.

Thus, for primary school pupils who don't eat regularly, an increase in vascular resistance is a typical side of adaptation to school loading, as proved by indexes of BPD in rest and under a local strain. Continuous breaks and disbalance in diet can lead to disruptions in homeostasis and functional condition of organism among children and adults [1, 3]. The data of our research states an increased level in functional heart tension among children with continuous breaks between meals.

References

1. Salamaykin N.I., Kolodina E.V. Incretion of ferments of digestive glands of children of different ages // Physiology of human development: Materials of international conference. – 2000.
2. Chastoyedova I.A., Kamakin N.F. Pepsinogen and amylase of large bowel among children of early ages // Physiology of human development: Materials of international conference. – 2000.
3. Thompson Y. Blood lead levels and children beh.: results from the Edinburgh lead study // Child psychol. Psychiatry. – 1989. – Vol. 30, № 4. – P. 515–528.

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THE ROLE OF THE FACTORS OF THE SUN ACTIVITY FOR THE STATISTICAL OF THE CARDIO – VASCULAR AND NERVOUS DISEASES IN MIDDLE LATITUDE REGION

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The present article reports results of the statistical treatment of the medical and geophysical data. A serious study of the problems of the heliobiological

relationships was first begun in [Tchizhjevsky A.L., 1930]. The investigations of the influence of the sun activity on the human organism were undertaken later in [Vladimirsky B.M., 1971].

The aim of the present article is to estimate of the influence of the heliogeophysical factors on the human health in middle latitude region. The medical data were taken from the station of the first medical aid in Murom of the Vladimir region. The geophysical data were taken from the observatory Borok in Yaroslavl region. The location of Murom corresponds to the middle geomagnetic latitude about 53°. The observatory is located on the same geomagnetic latitude 53° and on the same geomagnetic meridian 111°, which crosses Karelia and Scandinavia. Murom and Borok may be found in the projection of the plasmasphere on the Earth's surface under the specific geophysical conditions. The plasmasphere is one of the structure regions of the Earth's magnetosphere. The plasmasphere is subject to dynamics depending on the geomagnetic activity. According to [Sterlikova I.V., Ivanov A.P. 1997], the intensification of the high frequency oscillations of the magnetic field of the Earth (the high frequency geomagnetic pulsations) takes place in the plasmasphere. The medical data given in the article contains the recordings of the call time of the first medical aid in connection with sudden attack cardio-vascular and neuro diseases. Analysis is made in each variety of the following cardiovascular diseases: chronic ischemia diseases of heart, hypertonia diseases, hypertonia crisis, stenocardia, myocardial infarction and in the each variety of the following neuro diseases: vegetative-vascular dystonia, neuro-circulatory dystonia, bronchial asthma, myoneurasthenia, mental affection, psychosis, schizophrenia, insult. The medical data were chosen in accordance with the concrete magnetic storm because of the each case of the magnetospheric substorm is individual and does not repeat, according to [Akasofu S.I., 1971]. The medical data were analysed in three time intervals: before the magnetic storm, during the magnetic storm, after the magnetic storm. The geophysical data contain the information about the magnetic storms: the time of beginning of the storm, duration of the storm, the types of the magnetic storms (recurrent or flash), their particulars. Moreover the medical data contain the information about the indexes of the geomagnetic activity and also the recordings of the geomagnetic pulsations. Only the high frequency geomagnetic pulsations (1–10 Hz), which rhythms have coincidence with the human biorhythms, were chosen from the number of the known geomagnetic pulsations originated in the magnetic storm (substorm). The recording of the irregular pulsations of types Pi1B – rPi2, Pi1B-rPiP and Pi1C are used in the article. The geomagnetic pulsations Pi1B – rPi2 represent a microstructure of the geomagnetic pulsations of the Pi2 type (the oscillations Pi2 period equal 40–150 s). They are called rider of Pi2. These

type of the geomagnetic pulsations is observed in the phase of the beginning of the substorm (or of the magnetic storm). The geomagnetic pulsations Pi1B – rPiP represent a microstructure of the geomagnetic pulsations of PiP type (the oscillations PiP period is more 150 s). These type of the geomagnetic pulsations is observed in the phase of the development of the substorm. They are called rider of PiP. The geomagnetic pulsations Pi1B – rPi2 and Pi1B-rPiP have a different physical nature [Sterlikova I.V. 1985, 1987] and different mechanisms of generations. The geomagnetic pulsations Pi1C are observed in the phase of the recover of the magnetic substorm and have the another source of generation. The recordings of the continuous regular geomagnetic pulsations of the type Pc1 are used in the article besides. The geomagnetic pulsations Pc1 are called pearl also, because Pc1 is like pearl necklace. The generation of Pc1 may accompany the magnetic storm and also it may be observed after the magnetic storm on a third-seventh days-nights. It is possible that they have a different mechanisms of the generation. It is possible, the fact is a reason of the different reaction of the human organism on the generation of Pc1. The instantaneous reaction of the human organism, expressed in the sudden attack of the cardio-vascular diseases or neuros diseases are observed during of the flash magnetic storm accompanied Pc1. If the magnetic storm have a recurrent

character (without the chromospheric flash on the Sun), than the reactions of the human organism on the Pc1 have a certain delay for 1–1,5 days-nights in relation to the beginning of magnetic storm. The practical doctors may use the information reported in present article.

References

1. Tchijevsky A.L. Epidemicheskie katastrofy i periodicheskaya deyatel'nost' solntsa. (The epidemic catastrophes and the periodical activity of the Sun). – M., 1930. – 162 p.
2. Vladimirovsky B.M. Vliyaniye solnechnoy aktivnosti na atmosferu i biosferu Zemli (The influence of the sun activity on the atmosphere and the biosphere of the Earth). – M.: Nauka, 1971. – P. 126–140.
3. Sterlikova I.V., Ivanov A.P. Magnitofernyye subburi v geomagnitnykh pulsatsiyakh (The magnetospheric substorms in the geomagnetic pulsations). – M.: OIFZ im. O.Yu. Shmidta RAN, 1997. – 107 p.
4. Akasofu S.I. Polyarnyye i magnitofernyye subburi (The polar and magnetospheric substorms), – M.: Mir, 1971. – 318 p.
5. Sterlikova I.V. Geomagnetizm i aeronomiya. – 1987. – no. 1. – P. 160–162.
6. Sterlikova I.V. Publ. VINITI (Publ of the Union institute of scientific and technical information). – 26.04.1985. – no. 2827. – 24 p.

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