

*Materials of Conferences***MORFOGENESIS OF THYMUS  
IN WHITE RAT**

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I study development of thymus in white rat, including 30 embryos of 12–21 days, the 10 newborn's (1<sup>st</sup> day) and 20 rats of 1–3 month, on serial histological sections, staining by hematoxylin and eosin, azur-II and eosin, and total preparations. Definitive thymus is the association of two embryonic thymuses, right and left. These 2 classic lobes of thymus are false lobes which form secondary unpaired organ. Each of the 2 classic lobes is divided on the true lobes. I find many true lobes of thymus with different sizes, about 4 right and 4 left – cranial, middle, caudal and dorsolateral. The cranial lobe narrows in cranial direction and can rise up on the neck along trachea. In situ thymus has shape of bulb or cone, but after preparation it looks like pitchfork. False lobes of thymus remind the deformed cones.

The paired anlage of thymus is determined about embryonic neck. Lympho-epithelial tapes of right and left thymuses grow in caudal direction and descend into thoracic cavity on 15th day of the rat embryogenesis. Caudal ends of the thymuses lean against base of heart and widen on the both sides. In result magistralizing thymic branches of internal thoracic arteries sink into the right and left thymuses with their division on the cranial, middle and caudal true lobes. Internal thoracic artery gives off pericardiophrenic artery. It and soname vein with phrenic nerve passes in caudal direction moreover in ventral side from root of lung. These bundle separates small dorsolateral secondary lobe from each caudal lobe of thymus in white rat of second month old. Lungs limit the lateral growth of the thymic right and left false lobes. Therefore they go round the nerve-vascular longitudinal bundles from dorsal and then from lateral side.

The work was submitted to the International Scientific Conference «Basic research», Croatia, 28 July - 1 August, 2012, came to the editorial office 29.06.2012.

**RESEARCH OF INFLUENCE  
OF THE CORPUSCULAR AGENT OF SOLAR  
ACTIVITY ON THE HUMAN ORGANISM**

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Work corresponds to the contents of the project of the International program named «Global changes». The program directs to the research of

communications between of the geosphere and biosphere. The realisation of program is begun at 90-th and proceeds at the present time. The founder of the heliobiology A.L. Chizhevsky wrote about impossibility of study of the human organism separately from environment [Chizhevsky A.L. 1934]. The concept of environment has extended to an immense space because of discoveries of a magnetosphere, of a solar wind and of interstellar wind. The stream of charged particles deforms a geomagnetic field at interaction, changes the sizes of magnetosphere as a whole and the sizes of structural magnetosphere areas, causes the magnetic storms. The work purpose is a statistic check of a heliobiological communications in the middle-latitude region removed from of auroral geophysical zones. The subject and object of research are inhabitants of Murom in Vladimir region. An initial material for research: the medical data of the station of «First medical aid» in Murom and the geophysical data of the geomagnetic observatory of Borok in Yaroslavl region and the data of the International data centre. Both points Murom and Borok are located approximately on the same geomagnetic meridian 111° and have approximately the identical geomagnetic latitude 53°. The data of Station «First medical aid» contain the registration of the call time of first medical aid because of attacks of cardiovascular and nervous diseases. The geophysical information includes data about magnetic storms (time of the beginning, duration of the storm, type of the storm), data about indices of magnetic activity (planetary magnetic three-hour-range Kp -indices), data about chromospheric flashes on the Sun and recording of geomagnetic pulsations. The irregular geomagnetic pulsations (of the types Pi1B-rPi2, Pi1B-rPip, Pi1C, IPDP) [Sterlikova I.V. 1987] and the regular geomagnetic pulsations of the type Pc1 (pearls) at frequency range crossing with biorhythms of the human body are chosen from variety of geomagnetic pulsations. The recurrent magnetic storms and the magnetic flash storms are considered in the article. The reaction of a human organism to the corpuscular agent of solar activity depends on storm type: immediate (with the storm beginning) reaction in a recurrent storm and reaction with a delay from one and a half to two – three days in a storm of the flash character (accompanied by the chromospheric flash on the Sun). It is, as a rule, secondary, but more intensive maximum. The primary maximum is connected also with the storm beginning. It is found that the best correlation take place between the beginning of a magnetic storm on one hand and the attacks of nervous diseases (a vascular dystonia, a bronchial asthma) and the attacks of cardiovascular diseases (of hypertension type) on the other hand. The chronic ischemic heart disease patients feel ap-

proach of a magnetic storm some days before its beginning. The number of calls of first aid is above, than it take place in the storm beginning. This fact may be explained by decrease in geomagnetic activity before a storm. The analysis of dependence of attacks of illnesses from geomagnetic pulsations has shown that the greatest number of calls of the first medical aid was necessary for the moments of absence of pulsations within previous six hours at last. The six-hour interval corresponds to time of the inertness magnetosphere. The received result is in the consent with results of the Australian scientists [Buxton J.R., et.al. 1987] who have achieved easing of a syndrome of Parkinsona at rabbits owing to influence on their brain by artificial pulsations in a frequency range an alpha of a rhythm of biopotentials of a brain. It is necessary to notice that an alpha the rhythm 7–13 Hz is inherent for a rabbit, for a cat and for the person. Therefore the results received on rabbits, can be quite applicable to the human. However, the further researches are necessary to use nonconventional treatment methods of diseases successfully. The article reports about heliobiological communications in the geomagnetic middle latitudes. The received results may be explained by the resonans of high-frequency geomag-

netic pulsations in the natural resonator – plasmasphere [Sterlikova I.V., Ivanov A.P., 1997]. Murom is located in a projection of the plasmasphere on a terrestrial surface under certain geophysical conditions (the Kp-index above 5). Therefore Murom feels on itself whims of the space weather arising in the plasmasphere .

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The work was submitted to International Scientific Conference «Fundamental and applied research in medicine», Russia (Sochi), 27 September - 1 October, 2012, came to the editorial office on 21.08.2012.