

Bone Cerebral Analysis of Patients with Critical Condition.
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Morphological research of puncture of bone cerebral has been made, the composition of free nitric oxide and peroxide-radicals in bone cerebral is determined in critical situations. It is significant that the bone cerebral is unlearned in fact in critical situations. Adult patients of 27 years old are examined, with the critical situation of various geneses (sepsis, insult, trauma etc.). All patients were under artificial ventilation of lungs. Treatment is expressed in water deficiency replenishment and correction of metabolism, parenteral and enthrals nutrition, through antibiotic therapy and other arrangements. The research has shown us that the toxic graining is shown in cells of bone cerebral of patients being in critical situation. The quantity of metamielocytes is increased on this background. The quantity of neytrophils segment nucleus is also increased. And the neitrophils myelocytis, their quantity is decreased. Number of lymphoid elements is also increased, but the quantity of monocitus is not changed. Herewith, it is possible to discover the nutric oxide and peroxide radicals which were not existed in bone cerebral later. In body with critical state it is studied the puncture morphology of bone cerebral and is defined the consistence of nitric oxide and peroxide-radicals. It is established that during the critical condition of body, in bone cerebrals together with morphology changes takes place appearance of nitric oxide and peroxide radicals.

Key words: bone cerebral, critical states., patients, cell, electronic-paramagnetic resonance.

Introduction.bone cerebral is not studied during the critical states. Though, if we take into consideration, that critical state is often associated with hemorrhage, intoxication, inflammatory processes and with other pathology, consequently takes place quantitative and qualitative changes of myeloid elements, then existence of significant changes are not excluded (3) Herewith, in critical patients various pathologic processes (global and local hippo-perfusion, endothelia injure, acidosis and etc) are related to oxygen and nitric reactive radicals predominance and irregular production, what possibly leaves significant footprint on critical conditions processes and helps in bone cerebral changes formation; **Material and methods:** there are examined adult patients of 27 years old (20 male and 7 female); critical condition was caused with hemorrhagic insult (10 patients), ischemic insult (8 patients) polio-trauma (4 patients); cranium heavy trauma (5 patients) all patients had after-effect contagion complications (trachea bronchitis, sepsis, pneumonia, cystitis). All patients were under lungs artificial ventilation. A treatment was conducted with water deficiency replenishment and correction of metabolism, parenteral and enthrals nutrition Antibiotic therapy and intensive therapy, other traditional arrangements.

Material for studies was taken from breast bone punctuate 2-3 breast bone spaces. Before taking the material there was conducted Kasirski's needle dehydration, because hydro fusion injures cellular elements. Taking into consideration that punctuate becomes ferment very fast, it is needed to dilute it very fast (to count cariosities) and for pattern preparation. Following treatment of punctuate pattern is done as it is done with blood pattern. First of all it is calculated the number of megakaryocytic. Punctuate dilution and calculation of megakaryocytic in bone cerebrals is done in Phuks-Rozentals calculation cell. Finally 1 MKL punctuate is multiplied on punctuate dilution (20) and divided on cell capacity. Also it is conducted electronic-paramagnetic resonance analysis (EPR) nitric oxides definition was implemented by M.Gallegan and other methods. Cellular culture spectres registration was conducted on radio-spectre-meter PE -1307, which operates on frequency 9.77 Hr by modulation frequency 80 KHz liquid nitrogen temperature (-196 °C). In order to define the free nitric oxidize is used spin-snare – natrium diethyl-dithyo- carbonic (DETC) – sigma. (dozed by 10 mg 0.6 X 10⁶ on cell 0.5 ml in area) and Fe²⁺ citrate (0.5 mg FeSO₄ · 7H₂O 25mg citrate of atrium 10 mg 0.6 X 10⁶ on cell 0.5 ml in area). EPR spectres were defined with liquid nitric temperature on microwave frequency 20 mvt, concerning definition of peroxide-radicals (LOO) was used spin-snare-phenyl - tert – butyl neutron (PBN) (sigma) with doze 50g 0.6 X 10⁶ on cell 0.5 ml in area. The EPR spectre of LOO was defining on room temperature on microwave frequency 20 mvt.

Results and discussion: from analysis it is evident that in the patients with critical condition bone cerebral cells in some medicine was revealed toxic graining in neytrophils. The results of the study is presented in table I - where it is seen , that in bone cerebral of patients with critical state, neytrophils myelocytis are in norm (8.4 ± 1.1) on the third day it decreases, (6.5 ± 1.8) but it still stays in the norm frames. It is marked the increase of the metalomietocitis (7.1 ± 0.5 – N 7.7 ± 0.7 P> 0.5) what is concerned on neytrophils segment nucleus, their amount is in critical patients is augmented. (34.7 ± 1.4 – N - 36.4 ± 2.1 P> 0.5) the amount of neytrophils bacillus nucleus increases (12.6 ± 0.5 – N – 13.5 ± 0.7 P> 0.5) neytrophils is in the norm frame (0.96 ± 0.1 – N -1.4 ± 0.2 P> 0.1). Concerning lymphoid elements, lymphocytes number is augmented (9.0 ± 0.6– N - 10 ± 0.7 P> 0.5). The numbers of monocitus do not change (1.3 ± 0.1– N – 1.3 ± 0.2 P> 0.5).

Table I

Statistic figures	Neitrophilic myelocitiss %	Neitrophilic Metamyelocitiss %	Neitrophilic Bacillus - Nucleus %	Neitrophilic Segmen - Nucleus %	Neitrophilic Promielocitiss %	Eozenophilic Segment - Nucleus %	Lymphocitiss %	Monocitiss %	Bazophilic Normoblasts %
M ± m n	8.4±1.1	7.1±0.5	12.6±0.5	34.7±1.4	0.96±0.1	2.4±0.2	9.0±0.6	1.3±0.1	2.1±0.5
P 1/2	0.901<0.5	0.698<0.5	16.1047<0.5	16.06742<0.5	1.964<0.1	2.473<0.05	1.085<0.5	0<0.5	0.640<0.5

Basophilic normoblasts are augmented in patients with critical conditions ($2.0 \pm 0.4 - N - 2.1 \pm 0.5 P > 0.5$), it has to be remarked the significant decrease of policromatophilic normoblasts. ($4.6 \pm 0.96 - N - 2.1 \pm 0.6 P > 0.005$) the number of oxiphilic normoblasts their quantity increases ($6.9 \pm 0.7 - N - 9.0 \pm 0.4 P > 0.5$) plasma is in the norm frames ($0.8 \pm 0.1 - N - 1.0 \pm 0.1$) and the number of blastic cells ($0.6 \pm 0.04 - N - 0.5 \pm 0.1$). As to the Electronic – paramagnetic resonance analysis outcome (table II) Data of Bone Cerebral Electronic – paramagnetic resonance analysis during the critical conditions:

Table II

# Patients	Category	Statistic figures	NO	LOO		
1	Patients in critical condition, Day I	$M \pm m$	n	18.1 ± 5.4	10	4.0 ± 0.3
2	Patients in critical condition, Day II	$M \pm m$	n	t		
	p				13.4 ± 1.1	1.3 ± 0.4
					$4 \setminus 0.853 > 0.5$	$5.4 < 0.01$

#	Statistic figures	Policromatophilic normoblasts %	Oxophilic normoblasts %	Blastic cells %	Proeritroblasts %	Plazmocists %
1	$M \pm m$	4.6 ± 0.96	6.9 ± 0.7	0.6 ± 0.04	0.4 ± 0.2	0.8 ± 0.1
2	$M \pm m$	2.1 ± 0.6	9.0 ± 0.4	0.5 ± 0.1	0.7 ± 0.1	1.3 ± 0.4
	n	16	16	16	16	16
	t	2.208	2.605	1.0	3.7	3.7
	P	< 0.05	> 0.05	> 0.5	< 0.01	< 0.01

As it is seen according to the table above during the critical condition takes place appearance of nitric oxides' and peroxide-radicals. ($NO - 1.8 \pm 5.4$ and $LOO - 4.0 \pm 0.3$) this similarly indicates existence of oxidation stress (peroxidation) in critical patients, what gives hand to the development of apoptosis. After treatment, on the third day is marked decrease of the nitric oxide radicals. ($13.4 \pm 1.1 P > 0.5$) and also significantly decreases the level of peroxide-radicals ($1.3 \pm 0.4 P < 0.01$).

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 aRmoCena.

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