Key words: sepsis, systemic inflamatory response, clotting system, fibrinogen, prothrombin, hyperbilirubinemia.

THE INFLUENCE OF THE PULSED ELECTROMAGNETIC FIELDS ON THE PROLIFERATION AND MORPHOLOGY OF MESENCHYMAL STEM CELLS

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Stimulation of cell division is the source of physiological recovery that provides the most reliable perspective in tissue engineering. A non-invasive and accessible method of amplifying the process of cell division is using electromagnetic fields.

Our **purpose** was to analyze the pulsed electromagnetic fields capacity to influence the cellular proliferation *in vitro*. For this purpose, were used cell cultures of mesenchymal stem cells, derived from 14 days aviary embryos. Cells were subjected to a quasi-rectangular pulsed electromagnetic field with duration of 300μs, a frequency of 7.5 Hz, 2hours each day for 7 days.

The **results** indicate a rise with 25% of the number of cells subjected to the magnetic field, and this report was not influenced by the cell density. The cell morphology showed no difference between groups.

These results suggest the possibility of using low frequency pulsed electromagnetic fields in tissue engineering with the purposes to accelerate mesenchymal stem cell division, which can be applied in bone regeneration therapy.

Key words: Stem cell, pulsed electromagnetic field, cell culture, tissue engineering, bone regeneration.

CONSTITUTIONAL FEATURES OF THE CENTRAL BRANCHES OF SPHENOIDAL SEGMENT OF MIDDLE CEREBRAL ARTERY

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Pathology of the central perforating arteries of the brain has an important place among the cerebrovascular diseases. Since the structure of a hemorrhagic stroke hypertensive intracerebral hemorrhage occupy the first place. From all off the central perforating arteries, the greatest interest presents the lentikulostriales artery middle cerebral artery (MCA), a gap which leads to the formation of hemorrhages in putamen area. Due to the functional significance of these arteries goal: to identify options for building lentikulostriales arteries depending on the length of the sphenoid segment of the MCA in patients with different forms of the skull. The study was conducted at the Department of Topographical Anatomy and Operative Surgery KrasGMU. Studied 68 drugs with drawn from the brain dead who died of causes unrelated to the CNS. Prior to removal of the brain were measured longitudinal and transverse size of the skull with cranial index calculation and allocation: dolicho, meso-and brachycephalic. In the brain after