

August 22-23, 2019
Zurich, Switzerland

Natalia Pavliashvil et al., Arch Clin Microbiol 2019, Volume: 10

Microspical Picture of Microcirculatory Disturbances in Crush Syndrome Experimental Modelling

Natalia Pavliashvil, Natia Gamkrelidze and Shorena Khetsuriani

Tbilisi State Medical University

The aim of the study was to investigate adrenoreceptors sensitivity and microvascular diameter changes in different severity of crush syndrome.

Experiments were carried out on 50 white rats (200-250 gr) with the use of crush syndrome modeling classical methods in various periods of compression (3 hours, 6 hours) and decompression (1 hour, 6 hours). Microhemocirculation and microvascular adrenoreactivity were studied in rats' small intestine mesenteric arterioles by biomicroscope "Nikkon Labopot". Microvascular adrenoreactivity was studied by pharmacological analysis, concretely, with the use of epinephrine on the basis of α - or β - adrenal receptors blockers action.

Numerous microhemocirculatory disturbances were revealed in mesenteric arterioles. It is evident due to following changes in microhemocirculation: microvessels diameter changes, adrenoreactive structures dysfunction. Crush syndrome causes suppression of adrenoceptor sensitivity of mesenteric arterioles towards adrenaline which can be explained by stress induced hypercatecholaminemia, which is extremely apparent in

decompression period. Vascular tone practically remains without adrenal control, which negatively affects the regional blood flow to the organs

We can assume that severity of the changes correlates with compression and immensely on decompression period duration.

Key words: Microcirculation, Crush syndrome, β -adrenoreceptor, α -adrenoreceptor.

Biography

Natalia Pavliashvili has completed his PhD at the age of 29 years from Tbilisi State Medical University (TSMU). She is Associate Professor of Pathophysiology Department of TSMU and . She has published more than 80 papers in reputed journals, is an author of 3 elective programs and 2 textbooks in Pathophysiology. She is head of Educational Programs Management and Assessment Department. She is a member of British Microcirculation Society. She has supervised 7 PhD Candidates and has been Scientific Secretary for more than 20 PhD thesis defense. She is a peer reviewer more than 15 PhD research programs.

n.pavliashvili@tsmu.edu