

**MORPHO-FUNCTIONAL FEATURES OF PULMONARY MANIFESTATIONS IN BURN DISEASE AND THEIR CORRECTION WITH MELATONIN**

R.V. Yanko, P.K.Tsapenko, M.I. Levashov, M.O. Zavhorodnii, V.I. Portnichenko

Bogomoletz Institute of Physiology, NAS of Ukraine; ICAMER, NAS of Ukraine; 4 Bogomoletz str., 01024 Kyiv, Ukraine, vport@biph.kiev.ua

Burn disease, which occurs against the background of burn trauma, is often the cause of complications and the development of concomitant pathology. Using a standard 14-day burn model on Wistar rats, the effect of burn disease on the lungs and their correction with melatonin was studied. Changes in ventilatory response and the morphological condition of the lungs were examined. During the first 4 days after the burn, a decrease in ventilatory response was observed. This was followed by recovery and normalization of metabolism by the 14th day. In experimental therapy of burns using melatonin, on the contrary, a hypermetabolic response was observed during the first 3 days. By the 10th day, the ventilatory response decreased, and by the 14th day, it was not significantly different from the control group. Morpho-functional manifestations of burn disease in rats with burn injuries were characterized by changes in lung structure, indicating a decrease in their functional activity, a reduction in airiness, and suppression of gas exchange processes. In rats that received melatonin against the background of burn trauma, most morphometric indicators of the respiratory section of the lungs were restored to control values.