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## ABSTRACT BOOK

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# STATE OF PEROXIDATION PROTEINS AND THEIR DIAGNOSTIC SIGNIFICANCE IN DIAGNOSTIC OF PARENCHYMATOUS RESPIRATORY FAILURE IN NEWBORNS

*(Poster presentation)*

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**INTRODUCTION:** It is known that the formation of oxidants, antioxidant protection, lipid peroxidation proteins are natural processes. However, these mechanisms imbalance initiates peroxidation of proteins, leading to cell dysfunction, in particular the ability of cells to generate and conduct impulses and energy of regulatory functions.

**AIM:** The aim of the study was to examine the state of the intensity of peroxidation of proteins and to determine the diagnostic significance of these parameters in pulmonary parenchymal expirats in the diagnosis of respiratory failure in newborns in critical condition.

**MATERIALS AND METHODS:** The main observation group were 84 newborns with severe respiratory failure against the background of various diseases. To control group included 15 healthy children. The study of protein carbonyls were performed in the pulmonary expirats.

**RESULTS:** In infants with respiratory failure level of protein carbonyls of neutral character observed almost doubled compared with the group of healthy children ( $2,12 \pm 0,08$  mmol/g protein and  $1,15 \pm 0,08$  mmol/g protein,  $p < 0,001$ , respectively). Among children of the basic group registered the increasing of protein carbonyl content of main character in comparison with the control group ( $45,04 \pm 1,69$  mmol/g protein versus  $18,0 \pm 1,1$  mmol/g protein,  $p < 0,001$ , respectively). Sensitivity and specificity of the diagnostic test of determination of the level of carbonyl groups in pulmonary expirats (level of protein carbonyls main character in lung expirats  $> 46,0$  mmol/g protein) under conditions of respiratory support  $FiO_2$  above 0,4 in the diagnosis of parenchymatous respiratory failure in newborns is 77,4%. The relative risk – 4,6, and the odds ratio – 11,7.

**CONCLUSION:** Increased levels of protein carbonyls main character more than 46,0 mmol/g protein during neonatal respiratory support with the use of higher concentrations of oxygen can be regarded as a diagnostic marker of lung injury.

**Keywords:** newborns, protein lipid peroxidation, respiratory failure, noninvasive diagnosis