

12. IMPACT OF ULCERONECROTIC ENTEROCOLITIS ON THE DEVELOPMENT OF PULMONARY COMPLICATIONS IN PREMATURE INFANTS

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Introduction. NEC is a medical condition which causes long-term mortality and morbidity in premature infants admitted to neonatal intensive care units.

Aim of study. The incidence of this pathology varies from 5% to 9%, half of these cases are indications for surgery, as a result the newborns are dependent for a long time on mechanical ventilation and are more exposed to develop BPD. It is also known that the risk of developing NEC and RDS is inversely proportional to the term of gestation. Following a frequent NEC phenomenon can be found multiple organ dysfunction and abdominal distension, both of which leading to gas exchange disorder, with increased oxygen requirements, prolonged mechanical ventilation thus contributing to increasing risk for DBP, also affecting intestinal walls, migration of bacteria causing systemic inflammation and induces a dysbiosis of the lung microbiome.

Methods and materials. In order to assess lung complications in newborns with NEC, we performed a retrospective study, for the years 2019-2021, based on 54 premature newborns with NEC in the first month of life.

Results. In this study we observed an incidence of pulmonary complications inversely proportional to gestational age ($p < 0.005$), the most common causes being intrauterine infection - chorioamnionitis, neonatal sepsis, prolonged mechanical ventilation ($p < 0.001$), and associated lung problems - congenital pneumonia (100%), RDS DS (99%) and also pulmonary atelectasis, pneumothorax. Mortality rate was approximately 45% ($p < 0.001$), and BPD was found in approximately 30% of cases ($p < 0.0001$), which was indirectly correlated with gestational age and birth weight.

Conclusion. NEC is a multifactorial condition caused by intestinal ischemia, dysbiosis and a systemic inflammatory response that usually leads to lung inflammation and increases the risk of BPD. This effect is due to the disorder of complex molecular and cellular physiological mechanisms involved in immune defence. At the same time, pulmonary pathology and mechanical ventilation in premature infants can affect the oxygenation of the intestinal walls, disrupt the intestinal microbiome and trigger inflammatory cascades that promote the development of NEC.