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STRUCTURE OF COMORBIDITIES AND COMPLICATIONS OF EARLY SEPSIS IN NEWBORNS

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Until recently, neonatal sepsis was defined as an infection in the presence of at least two signs of systemic inflammatory response syndrome (SIRS). However, numerous studies in children have shown the low specificity of this approach and the frequent compensatory nature of the systemic inflammatory response syndrome, especially in the neonatal period. One of the key issues in combating sepsis is recognizing it as early as possible, that is, detecting infection and significant predictors of organ dysfunction.

Research Objective. To study the structure of comorbidities and complications of early sepsis in newborns.

Materials and Methods. The study was conducted from 2020 to 2023. A total of 195 mothers and their newborns were examined and divided into main and control groups. The main group consisted of 129 newborns with early neonatal sepsis. Subgroup 1a included 82 preterm infants, and subgroup 1b included 47 full-term infants. The second control group consisted of 66 practically healthy newborns, born to mothers with favorable pregnancies, normal Apgar scores at birth, no intrauterine hypoxia, and physiological early adaptation. Clinical-anamnestic studies analyzed the birth histories, development histories, and medical histories of the newborns. Statistical analysis was performed using Microsoft Excel 2010 and Statistica 6.1 software packages with Student's t-test, error probability (P) calculation.

Research Results. The structure of comorbidities and complications in the observed newborns with early sepsis was analyzed. Among comorbidities, the majority of children had neonatal jaundice, with a notably high prevalence in the preterm group (82.9±5.4%).

Anemia was the most common condition underlying early sepsis in newborns, affecting nearly all preterm infants (97.6±2.3%) and significantly less common in full-term infants (76.6±7.0%).

Due to adverse pregnancy outcomes and maternal comorbidities, intrauterine growth retardation (IUGR) was also common, particularly in preterm infants (47.5±5.5%) compared to full-term infants (17.1±5.4%).

An important finding was that 42.6±5.4% of preterm infants had hypoxic-ischemic encephalopathy (HIE), while in the full-term group with early sepsis, HIE of grades 2-3 occurred in one-third of infants (29.7±6.6%). Periventricular leukomalacia occurred in 11 preterm and 4 full-term infants with early sepsis.

Our research found that nearly one-third of all infants with early sepsis had dysmetabolic nephropathy (27.9±3.9%), with similar incidence rates in both preterm (28.0±4.9%) and full-term (27.7±6.5%) groups.

Among all complications, respiratory failure (86.6±3.7%) and cardiovascular failure (84.1±4.1%) were the most frequently observed, affecting the majority of preterm infants. Hemorrhagic syndrome also predominantly developed in preterm infants (30.5±4.9%). Other complications such as cardiomegaly (23.2±4.6%), progressive hydrocephalus (10.9±3.4%), and coma (8.5±2.3%) were more common in preterm infants. Brain edema was observed in 8.5±2.4% of all newborns in the main group, with an incidence 2.6 times higher in preterm infants compared to full-term infants with early sepsis. Ascites was detected with approximately equal frequency in both preterm and full-term infants.

Conclusions. Our study showed that among comorbidities, neonatal jaundice, HIE, and dysmetabolic nephropathy were prevalent, with anemia and IUGR being common background conditions. Respiratory and cardiovascular system disorders were the predominant complications.