Abstract

The long-term trend in the decline of neonatal mortality is accompanied by high morbidity in very preterm neonates. Bronchopulmonary dysplasia/neonatal chronic lung disease (BPD/CLD) is one of the most serious morbidities associated with preterm birth, due to a number of severe consequences and increased mortality in infancy. BPD/CLD is a chronic respiratory disease associated with a number of risk factors, including the postnatal systemic inflammatory response. However, the definition of systemic inflammation in neonates is highly variable and is usually based on various combinations of clinical and laboratory parameters.

The aim of the study was to analyze the role of systemic inflammation in newborns, expressed by serum levels of interleukin (IL) -6, in predicting the development of BPD/CLD. The study population was divided into patients with moderate and severe CLD and without, with respect to long-term outcome. Early peaks in the first 24 hours after birth and late peaks over 7 days after birth were evaluated. Binary models of logistic regression (stepwise forward) were constructed to predict the development of CLD. This was followed by analysis of the receiver operating characteristic curves and the area under the curves with the identification of optimal limit values.

In conclusion, we demonstrated the importance of the early systemic inflammatory response in the development of CLD. The revision of risk factors revealed the surprising role of the monochorionic component of multiple pregnancy. Patients with serum levels below 175 ng / l in the first 24 hours after birth may be, in the absence of other risk factors, more suitable candidates for non-inclusion in interventional studies to prevent the development of CLD.

Key words: very preterm newborn, neonatal chronic lung disease, interleukin-6, systemic inflammatory response