THE VALUE OF DIAGNOSTIC TESTS IN PREDICTING HYPERBILIRUBINEMIA IN ABO INCOMPATIBILITY

D. Stoniene, J. Buinauskiene, E. Markuniene, R. Tameliene, A. Kudreviciene

Hospital of Lithuanian University Health Sciences, Kaunas, Lithuania

Aim of the study: To establish predictive criteria of neonatal hyperbilirubinemia in ABO incompatibility.

Method: 668 healthy full-term newborns with ABO incompatibility were initially enrolled in the prospective cohort study.

Results: Hyperbilirubinemia was diagnosed to 71(10.6 %) newborns. Positive direct Coombs' test (DCT) was diagnosed significantly more often to newborns with hyperbilirubinemia, even 85.5% newborns of this group had negative DCT. Total serum bilirubin (TSB) level cut-off point at the 6 hour of life was 76.0 $\mu\text{mol/L}$ (sensitivity 0.9, specificity 0.9) i.e. 9.7% in healthy group and 87.3% ($P < 0.001$) of newborns with hyperbilirubinemia had TSB 76.0 $\mu\text{mol/L}$. According to the determined value, it can be predicted that newborns with TSB level $>76 \mu\text{mol/L}$ at the age of 6 hours will have hyperbilirubinemia with an odds ratio of 64.0[30.2-135.5]. With a ROC curve hemocrit cut-off point 44% was determined (sensitivity 0.5; specificity 0.5). The cut-off point of reticulocytes was determined to be 4.8% (sensitivity 0.8, specificity 0.7). Binary logistic regression analysis model allows to predict that newborns will have a higher odds ratio to be diagnosed with hyperbilirubinemia (47.5[20.4-110.4]), when TSB at the 6 hour of life is $>76 \mu\text{mol/L}$, 3.0[1.4-6.4], reticulocytes $>4.8\%$, 6.0[2.8-12.7], hematocrit $< 44\%$, 2.6[1.0-7.3], spherocytes >1.5 (units), positive DCT (1.7[0.6-4.8]).

Conclusions: The most significant factor in predicting ABO hyperbilirubinemia is TSB at the age of 6 hours $>76 \mu\text{mol/L}$. The prognostic value of the hematocrit and reticulocytes level in blood was lower. The number of spherocytes in blood and DCT has no prognostic value.