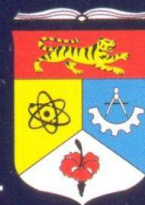


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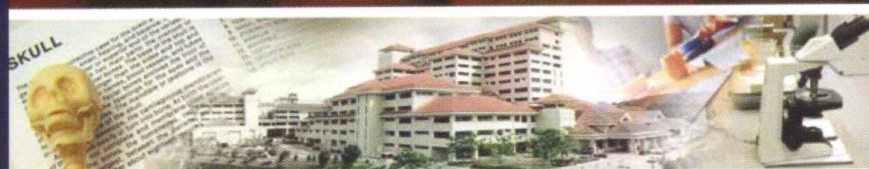
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PREDICTION OF SIGNIFICANT NEONATAL JAUNDICE IN BABIES WITH ABO INCOMPATIBILITY BY CORD BLOOD TESTS

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Background:

Haemolytic disease of the newborn (HDN) due to ABO incompatibility is a risk condition, many newborns require treatment due to severe hyperbilirubinemia. The objective of this study was to evaluate prospective parameters such as direct antiglobulin test (DAT), IgG anti-A or anti-B titer and total bilirubin in the cord blood to be used as tools to predict the occurrence of significant hyperbilirubinemia in healthy term newborns with ABO incompatibility.

Materials & Methods:

A total of 214 cord blood samples from healthy newborn of mothers with blood group O, were selected for this study. They were divided into two groups which were ABO incompatible group (114 babies with either blood group A or B) and ABO compatible group (100 babies with blood group O) (as control group). All the cord blood samples were analyzed for total bilirubin. In ABO incompatible group, severity of jaundice was assessed and types of treatment were recorded. In this group, DAT and IgG anti-A or anti-B titer were also performed.

Results:

There was significant correlation between severity of jaundice, phototherapy requirement and total bilirubin in the cord blood with ABO incompatible newborns ($p < 0.05$). However, there was no significant difference in the cord blood total bilirubin level below or above $44 \mu\text{mol/L}$ (2.5mg/dL) in the occurrence of neonatal jaundice ($p > 0.05$). Newborns with antibody titer (IgG anti-A or anti-B) of four and above were jaundiced. Specificity and sensitivity of cord blood tests for prediction of neonatal jaundice were 95% and 14.9% respectively for DAT positivity; 85% and 36.2% respectively for the presence of antibody and; 85% and 21.3% respectively for cord blood total bilirubin level of $\geq 44 \mu\text{mol/L}$.

Conclusion:

This study has shown that the cord blood tests for DAT, presence of IgG anti-A or anti-B and cord blood total bilirubin were specific but not sensitive to predict neonatal jaundice. However the IgG anti-A or anti-B titers of four and above were very useful in predicting the occurrence of neonatal hyperbilirubinemia. The level of cord blood total bilirubin $\geq 44 \mu\text{mol/L}$ (2.5mg/dL) was not shown to have a good prediction of significant hyperbilirubinemia.

Keywords:

neonatal jaundice, ABO incompatibility, cord blood