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THE ASSOCIATION BETWEEN G6PD DEFICIENCY AND TOTAL SERUM BILIRUBIN LEVEL IN ICTERIC NEONATES

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Abstract:

Glucose-6-phosphate dehydrogenase (G6PD) deficiency is the most important disease of the hexose monophosphate pathway. Deficiency of this enzym can lead to hemolysis of red blood cells. Our aim was to study the prevalence of G6PD deficiency in relation to neonatal jaundice. We studied 456 clinically icteric neonates Laboratory investigations included determination of direct and indirect serum bilirubin concentrations, blood group typing, direct coomb's test, hemoglobin, blood smear, reticulocyte count and G6PD level. We divided these neonates to 3 groups based on total serum bilirubin level (TSB): TSB< 20 mg%, TSB=20-25 mg%, and TSB>25 mg%. In only 35 (7.6%) of cases G6PD deficiency was diagnosed. All of these babies were male. From 456 icteric neonates, 213 cases belong to group 1 (TSB<20 mg%), 158 cases belong to group 2 (TSB=20-25 mg%) and 85 cases belong to group 3 (TSB>25 mg%). 16 neonates from 213 neonates of group 1, 6 neonates from 158 neonates of group 2 and 13 neonates from 85 neonates of group 3 had G6PD deficiency. There was statistically significant difference of prevalence of G6PD deficiency between group 2 and 3 (15.3% vs 3.8%)(P = 0.001). Between groups 1 vs 2 and 1 vs 3 no statistically significant difference was found. Early detection of this enzymopathy regardless of sex and close surveillance of the affected newborns may be important in reducing the risk of severe hyperbilirubinemia. This emphasizes the necessity of neonatal screening on cord blood samples for G6PD deficiency.

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