

The Accuracy Of Ultrasound Features In The Diagnosis Of Biliary Atresia

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Purpose of the study: To assess the role of ultrasound (US) in the diagnosis of biliary atresia.

Materials and Method: Fasting infants with conjugated hyperbilirubinemia were subjected for US examination in Hospital Sultanah Bahiyah, Kedah. The patients were grouped into biliary atresia (BA) and non-biliary atresia (non-BA) based on the surgical findings and clinical follow up. Tri-angular cord (TC) sign, gall bladder (GB) morphology, liver size, and echotexture, splenic size, hepatic artery size, hepatic artery to portal vein ratio, presence of a common bile duct, and presence of subcapsular flow on colour Doppler were recorded. Sensitivity, specificity, positive and negative predictive values were calculated for each US variable. BA and non-BA groups were compared by using the Fisher exact test for categorical variables and an unpaired t test for continues variable.

Results: A total of 82 infants were included in the study; 42 had surgically confirmed BA and 40 had other documented causes of neonatal jaundice. Nine US features namely TC sign, GB morphology, liver size, liver echotexture, splenic size, hepatic artery size, hepatic artery to portal vein ratio, presence of a common bile duct, and presence of subcapsular flow on colour Doppler showed a significant different between BA and non-BA group. Ultrasound able to correctly classified 82 infants into BA and non-BA group with 98% accuracy.

Conclusions: BA can be diagnosed with US from other cause of conjugated hyperbilirubinemia in 98% of patients if multiple US features are carefully evaluated. These ultrasound variables may serve as independent predictors of BA.