Turkish Journal of Medical Sciences

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The role of magnetic resonance imaging in the prediction of the neurodevelopmental outcome of acute bilirubin encephalopathy in newborns

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Abstract: Aim: Magnetic resonance imaging (MRI) is widely used in the diagnosis of acute bilirubin encephalopathy, but the relationship between MRI findings and neurodevelopmental outcome in newborns with acute bilirubin encephalopathy remains unclear. The aim of this study was to investigate the relationship between acute bilirubin encephalopathy, MRI findings, and neurodevelopmental outcome. Materials and Methods: The study included 13 infants with acute bilirubin encephalopathy. MRI was performed at 11-30 days of age. Infants were evaluated using the Denver Developmental Screening Test at 3 and 6 months of age. Results: Four of the 13 infants developed well. Five infants had abnormal MRI findings. Two of these 5 infants had good neurodevelopmental outcome. Nine of the 13 patients had poor developmental outcomes. Conclusion: In newborns with acute bilirubin encephalopathy, neither encephalopathy stage nor MRI findings predicted neurodevelopmental outcome, as measured by the Denver Developmental Screening Test.

Key Words: Acute bilirubin encephalopathy, hyperbilirubinemia, magnetic resonance imaging, kernicterus