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Introduction : Unconjugated bilirubin is known to cause neurotoxicity by causing neuronal injury as it has the af nity to phospholipids of the plasma membrane. Plasma membrane structures such as N-methyl-D-aspartat (NMDA) receptor/ion channel complex located within neuronal membranes on the synaptic surface of neurons are disrupted by prolonged activation. is Bilirubin-induced neurotoxicity may share common features with HIE-induced brain injury by mechanisms mediated by the NMDA receptor. NMDA antagonist might help in blocking this injury. Magnesium (Mg) ion, is one of the most important antagonistic regulators of the NMDA receptor. It protects the CNS against hypoxia and exerts its neuroprotective e ects by blocking excitotoxic and NMDA receptor mediated neuronal injury mechanisms. So this study is taken up to know the magnesium relationship with bilirubin levels in the neonate.

Aims and Objectives Association between neonatal hyperbirubinemia and serum magnesium levels; Serum magnesium levels in hemolytic disease of newborn vs. non hemolytic disease of newborn with hyperbilirubinemia

Methodology: Case control study on 100 neonates as cases and 100 controls which are being matched, ser bilirubin levels measured along with serum magnesium levels. Conducted in KIMS hospital Bangalore, India. For period of 1 year May 2018 to May 2019.

Results In this study it was noticed that cases had higher magnesium levels (avg: 2.8mg/dl) along with seru bilirubin (avg: 15mg/dl) than controls and magnesium levels were higher in hemolytic disease of newborn than no hemolytic disease of newborn.

Conclusion: In conclusion, there is a positive correlation between plasma Mg levels and severity of hyperbilirubinemi in new-borns; it could be a neuroprotective compensatory mechanism to reduce bilirubin toxicity. And also in hemolytic disease of newborn, magnesium levels were much higher. So this relationship and interactions betwe serum Magnesium levels and hyperbilirubinemia will make it possible to use cord blood or early postnatal M measurements Tw rodtlig whe cdvelpretsof hsinantyperbilirubinemia nd hq10 (ude)5 (t)-5 (no)12 (n)ig whe cv