A Study to assess the effect of phototherapy on Serum Magnesium levels in late preterm neonates with hyperbilirubinemia

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Introduction

Jaundice is a common condition seen in neonates requiring phototherapy. Phototherapy on the other hand leads to depression of pineal gland by transcranial illumination resulting in decrease in melatonin level. Melatonin stimulates secretion of cortisone, cortisone usually causes resorption of calcium and magnesium leading to hypocalcemia and hypomagnesemia. Bilirubin is known to cause neuronal injury by activating the NMDA receptors were as magnesium is an NMDA receptor antagonist, thus having a protective effect on neuronal injury by bilirubin. In preterm it is known to have hypomagnesemia, so this study was to see if phototherapy will further effect the magnesium metabolism.

Aims and Objectives

- Correlation of magnesium and bilirubin levels
- Effect of phototherapy on magnesium levels

Materials and methods

Study was done in NICU of KIMS hospital, from june 2018 to june 2019 on late preterm neonates. samples were collected for bilirubin and magnesium levels before and 48hours post phototherapy. Excluded all babies with pathological jaundice, other comorbidities

Results

Study was done on 56 babies of which average magnesium values noted before phototherapy was 2.8mg/dl and post phototherapy was 1.7mg/dl showing a significant difference.p <0.05 with 95% confidence interval. . And, using chisquare method and spss software.

Conclusion

Magnesium is an important element for body functioning and its deficiency leads to many morbidities. As in preterm many supplements are being given, may be its time for magnesium supplements to be considered for late preterm neonates undergoing phototherapy.