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Evaluation of serum levels of malondialdehyde (MDA) and total antioxidant capacity before and after phototherapy in neonates with Hyperbilirubinemia

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Background and Aim : Hyperbilirubinemia in neonatal is a common problem and often benign. Pathological levels of bilirubin in a strong toxic neurological effects. Phototherapy is a medical procedure for the treatment of hyperbilirubinemia is common and least expensive. The main objective of this study was to evaluate serum levels of malondialdehyde (MDA) and total antioxidant capacity (TAC) of plasma before and after phototherapy. **Methods :** In this study 35 infants with a gestational age greater than 35 weeks with hyperbilirubinemia were admitted in Children's Hospital Shahid Madani of Khorramabad were enrolled. Neonates were treated with phototherapy for a maximum of 48 hours. Measuring malondialdehyde ((MDA) serum using thiobarbitoric acid and measurement of serum total antioxidant capacity (TAC) was performed using FRAP. **Results :** The mean serum bilirubin levels in newborns before and after phototherapy is significantly decreased, 14.42 and 8.74 respectively. also the mean serum level of MDA in neonates before and after phototherapy were significantly reduced 3.76 and 2.8 respectively. The average level of TAC in newborns before compared to after phototherapy was significantly decreased 1.12 and 0.77 respectively. **Conclusion :** Neonatal hyperbilirubinemia by Phototherapy cause reduce serum bilirubin levels and the reduction of lipid peroxidation. Also serum total antioxidant capacity reduced which refers to increased oxidative stress through antioxidant capacity has neutralized. Decreased levels of antioxidants may contribute to tissue damage in neonatal jaundice.

Keywords : Hyperbilirubinemia, Oxidative stress, Phototherapy.

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