SUMMARY

Phototherapy decrease the progression to severe hyperbilirubinemia in infants with moderate hyperbilirubinemia. Its effectiveness is related to the area of skin exposed and the intensity of the light at the skin.

However, this treatment modality may itself result in the development of hypocalcemia and create serious complications including convulsion and related condition**.**

This work was planned to study the prevalence of phototherapy – induced hypocalcemia in icteric newborn and to compare it between premature and fullterm babies.

The study was carried out on 100 patients (50 fullterm and 50 preterm neonates) receiving phototherapy for the treatment of physiological jaundice. In addition, 20 neonates (10 fullterm and 10 preterm) were included in this study as a control group.

There is no significant difference between fullterm and control fullterm as regard gestational age, postnatal age, weight, length and head circumference, mode of delivery and sex distribution.

There is a significant difference between preterm patients and control group as regard postnatal age, weight and head circumference.

There is no significant difference between preterm patients and control group as regard sex and mode of delivery.

There was a highly significant difference in serum bilirubin level before and after phototherapy in both fullterm and preterm neonates.

There was a significant difference between preterm patients and control group before phototherapy as regard serum bilirubin and total serum calcium.

There was a reduction in total serum calcium 48 hours after phototherapy and on discharge than before phototherapy in fullterm neonates.

There was a reduction in serum calcium after 48 hours phototherapy and on discharge than before phototherapy in preterm neonates.

There was a highly significant decrease in total serum calcium in both fullterm and preterm neonates before, 48 hours after phototherapy and on discharge.

There is a negative correlation between total serum calcium and duration of phototherapy.

There is a positive correlation between total serum calcium and gestational age.

In the majority of cases in this study, calcium decrease in the newborn babies under phototherapy was not accompanied by signs and symptoms found in hypocalcemia such as apnea, cyanosis or convulsion only jitterness and irritability which more in preterm than fullterm.

There was a direct relationship between duration of phototherapy and development of hypocalcemia, which more in preterm than fullterm babies.

In our study 19 neonates (19%) developed hypocalcemia. There were significant difference between the prevalence of hypocalcemia in premature (26%) and full term neonates (12%). These results reveal that the prevalence of hypocalcemia induced by phototherapy in premature more than fullterm neonates.