Abstract

Effect of duration of phototherapy on plasma 25(OH)-vitamin D and Total serum calcium in neonatal jaundice.

Introduction

Neonatal jaundice is a common clinical phenomenon leading to the doctor and receiving diagnostic and therapeutic medical care and services. Using of phototherapy seems to be harmless, but its side effects include rash, diarrhea, increased body temperature, dehydration and hypocalcemia. Total and ionized calcium decreased in cases of children under phototherapy has been reported that can be associated with increased urinary excretion of calcium. Due to radiation effects of phototherapy on vitamin D and calcium, hence we intended to design a study to explore the effects of phototherapy.

Material and Methods

This study was conducted on 100 infants with physiological jaundice worsened. The blood sample was taken from babies before phototherapy as well as 24, 48 and 72 hours after phototherapy; the levels, 25-hydroxy vitamin D and calcium were checked. Demographic data, calcium, 25-hydroxy vitamin D and bilirubin levels of infants were recorded and all obtained information was analyzed by the statistical software.

Results

In this study, 100 infants with physiological jaundice were examined which 57% were boy and mean age of them were 6.80 days. Vitamin D levels in newborns in times zero, 24, 48 and 72 hours, was 9.34, 9.52, 10.20 and 10.50 ng/dl respectively; that this increase was not statistically significant (p<0.582). Calcium levels in times zero, 24, 48 and 72 hours was calculated 9.43, 9.16, 8.88 and 8.35 mg/dl respectively; that this reduction in calcium levels was statistically significant (p<0.001). Bilirubin levels at times zero, 24, 48 and 72 h was also calculated 17.29, 15.53, 12.78 and 10.89 respectively; that this reduction in bilirubin levels was statistically significant (p<0.001). As well as there was no correlation between calcium, vitamin D and bilirubin with gender.

Conclusion

The results of this study showed that phototherapy can lead to a significant reduction in calcium levels and neonatal hypocalcemia increase but failed to significantly increase in vitamin D levels.

Key words: Vitamin D, Hypocalcemia, Phototherapy, Neonatal Jaundice