Summary and Conclusion

Jaundice is the most common condition that requires medical attention in newborns. Few term newborns with hyperbilirubinemia have serious underlying pathology. More recent recommendations support the use of therapy less intensive in healthy term newborns with jaundice.

Management with Phototherapy to diminish the indirect bilirubin level is a benign procedure with few side effects such as rash, loose stools, increased water loss.

Observations showed that cytokine production might be up regulated or reduced after exposure to UV radiation in vitro or in vivo.

These observations may reflect that T cells are highly sensitive to UV radiation compared to keratinocytes and both cell types secrete cytokines.

The aim of this study is to investigate the influence of using phototherapy in the prevention or treatment of neonatal jaundice on the level of tumor necrosis factor (TNF)-α, which is one of the most important cytokines secreted in patients exposed to acute UV radiation.

This study included 40 term newborns with jaundice in neonatal intensive care unit (NICU), having indirect bilirubin levels higher than 15 mg/dl and the control group included 15 healthy term newborns.

Blood samples were obtained from hyperbilirubinemic newborns before and after 72 hours of exposure to phototherapy and from controls at the examination time.

The level of serum TNF- α was measured in the samples using solid phase enzyme immunoassay (ELISA) using kit, Bio Source Europe S.A Rue de I' Industrie 8B-1400 Nivelles Belgium.

Serum TNF-α level in both patients before phototherapy and control group is similar. Serum TNF-α level significantly increased after 72 hours of

exposure to phototherapy and this change was statistically significant (P=0.001).

The results demonstrate that in addition to the well-known positive effect of phototherapy on the neonatal serum bilirubin level, this treatment affects the function of the immune system in newborns via alterations in TNF-α production.

The results may suggest that neonatal hyperbilirubinemia does not influence the serum levels of TNF-α.