

Summary

Term infants with perinatal illness develop Transient Hypothyroxinemia (TH) during the first week of life , a finding similar to that commonly observed in preterm infants.

Infants with (TH) are those with $T_4 < 10^{\text{th}}$ percentile for that day s screening and normal TSH level (< 25 MIU/dl). T_4 that defined the 10^{th} percentile was 9.03 Mg/dl.

This study was aiming to determine pattern of alterations in thyroid hormone concentrations in the first 2 weeks of life in mechanically ventilated sick full term infants and to correlate these alterations with the severity of the disease and short outcome of the Non Thyroidal Illness (NTI).

This study was carried out in neonatal intensive care unit of Benha Teaching Hospital during the time period from July 2006 to March 2007 .

The study included 35 full term neonates that were divided into:
Group I; 25 sick full term neonates who needed mechanical ventilation .
Group II; 10 healthy full term neonates as a control group.

Medical, obstetric and family histories were taken with exclusion of infants with any congenital anomalies or infants of mothers with any thyroid problem.

Thorough clinical examination of the neonate and detection of the gestational age using last date of menstrual period and Ballard Scoring System were done.

Three blood samples for determination of serum T_3 , T_4 and TSH levels were taken at birth (cord blood), on the 5^{th} day and on the 14^{th} day.

Quantifying the severity of perinatal illness using SNAP score was done .

The results of this study showed :

- Levels of serum T_3 , T_4 and TSH of cases were not of significant difference in comparison to the control group at birth .
- Levels of serum T_3 and T_4 of cases were significantly lower in comparison to the control group on the 5th day of life but there was no significant difference in serum TSH levels of the studied cases and control groups on the 5th day of life .
- On the 5th day , levels of serum T_3 , T_4 and TSH were significantly decreased in comparison to their levels on the 1st and 14th day among the studied cases .
- Levels of serum TSH of cases delivered by vaginal delivery assisted by ventouse were significantly higher than their levels among cases delivered by normal vaginal delivery or safe cesarean section .
- On the 1st day , levels of SNAP score were significantly higher in comparison to their levels on the 5th and 14th day among the studied .
- On the 5th day , levels of SNAP scores correlated inversely with serum levels of T_3 and T_4 among the studied case .
- Levels of serum T_3 and T_4 were significantly lower in asphyxiated than non asphyxiated groups on the 1st and 5th day , but there were no significant difference between the two groups with respect to T_3 , T_4 on the 14th day and TSH on the 1st , 5th and 14th day .
- On the 5th day , levels of serum T_3 and T_4 were significantly lower in cases who received dopamine in comparison to infants who did not need dopamine as supportive treatment .

- We concluded that :

Sick full term infants may develop TH . These cases have longer course of mechanical ventilation , longer duration of hospital stay and worse prognosis .

- We may recommend to follow up thyroid hormones levels to identify the hypothyroid / euthyroid status .