Newborn Screening, Inborn Errors of Metabolism

AB048. Maternal and neonatal factors associated with transient neonatal hyperthyrotropinemia: Indian context

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Background: Maternal and neonatal factors are known associated with transient neonatal hyperthyrotropinemia (TNH). This study intended to assess maternal and neonatal factors associated with TNH and its effect on developmental quotient at 3 months of age.

Methods: Using a case-control study design, 70 newborn-mother dyads whose newborns had TSH values >10 mIU/L but returned to normal with normal FT4 within 2 weeks after birth were included. Seventy preceding/succeeding dyads were considered as the control group. Neonatal factors studied were weight, sex, mode of delivery and presence of a coexisting anomaly. Maternal factors studied were age, multiple pregnancies, parity, thyroid status, urine iodine level, autoimmunity and family history of thyroid disease. TSH estimation was done by time resolved fluroimmunoassay. FT3 and TSH estimation was performed using chemiluminescence. Urinary iodine (UIC) was estimated by wet digestion method and Anti TPO estimation was done using ELISA.

Results: Of 11,739 births, 86% were screened within 1-year period. Mean TSH value were 18.45 mIU/L in case group and 3.03 mIU/L in control group. TNH was more common in females, 1.25:1 ($P<0.001$), and in those born to mothers with thyroid dysfunction ($P=0.003$). No statistically significant difference was observed between groups in relation to weight, gestational age, parity, mode of delivery, and presence of anomaly. Iodised salt consumption was present in 97.5% of women. UIC was found inadequate in 30% of mothers of the case group and in 8% of the control group. Developmental assessment was done using DASII. Out of 70, two neonates whose mothers had overt thyroid dysfunction had developmental delay with deranged thyroid profile.

Conclusions: Closer surveillance is required for neonates born to mothers with evidence of thyroid dysfunction or autoimmunity. DASII aids in early identification of delay and directs both early intervention as well as re-evaluation of the biochemical phenotype.

Keywords: Transient neonatal hyperthyrotropinemia (TNH); developmental quotient

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