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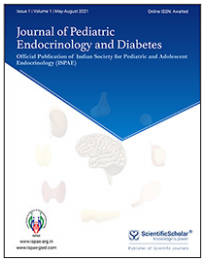

Editorial

Diagnosis of hypothyroidism in pregnancy and screening of babies born to hypothyroid mothers

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As the fetus is entirely dependent on maternal thyroid hormone supply, especially in the first half of pregnancy, untreated overt maternal hypothyroidism may cause several pregnancy-related complications and adverse neurocognitive outcomes in the offspring. Although current guidelines do not recommend universal screening of all pregnant women for thyroid disorders, thyroid-stimulating hormone (TSH) screening is recommended for those with risk factors. The American Thyroid Association (ATA) 2017 guidelines recommend identification of population-based trimester-specific upper reference limit (URL) for TSH for the diagnosis of hypothyroidism during pregnancy and if such data are not available, to use an URL of 4.0 mU/L (or 0.5 mU/L lower than non-pregnant URL).[1]

In women with known hypothyroidism, an increase in the dose of levothyroxine (LT4) by 20–30% is required during pregnancy to maintain euthyroid status (TSH ≤2.5 mU/L). For hypothyroidism diagnosed during pregnancy, it is recommended to start LT4 therapy if TSH level is ≥10.0 mU/L.[1,2] For those with mild TSH elevation, the ATA 2017 guidelines recommend testing for thyroid peroxidase antibody (TPOAb). If TPOAb is positive, treatment ***is initiated*** if TSH is between 4 and 10 mU/L and ***therapy is to be considered*** if TSH is in the range of 2.5–4.0 mU/L. There is no consensus regarding initiation of treatment in those with TPOAb negativity and TSH between 4.0 and 10 mU/L.[1,3]

The American College of Obstetricians and Gynecologists guidelines recommend treatment only for those with overt hypothyroidism. In resource-limited countries where thyroid autoantibody is not routinely tested or available, the presence of additional risk factors is taken into consideration to initiate LT4 therapy for TSH levels between 4.0 and 10 mU/L. At present, there is no convincing evidence that treatment of subclinical hypothyroidism (SCH) during pregnancy has maternal or fetal benefits.

Irrespective of the maternal thyroid status, all newborns must be screened for congenital hypothyroidism (CH) to prevent the devastating developmental consequences of untreated CH. The Indian Society for Pediatric and Adolescent Endocrinology (ISPAE) has published clear guidelines in 2018 on newborn thyroid screening and management of those with confirmed CH.[4] While prompt LT4 therapy is recommended for all babies with confirmed CH, there is no consensus worldwide regarding the long-term impact as well as the need for treatment in babies with transient neonatal hyperthyrotropinemia (TNH). The ISPAE recommends LT4 initiation if TSH remains >10 mU/L after 3 weeks of age even when T4/FT4 are normal.[4]

In this issue, in an article titled "Prevalence of CH and TNH in babies born to hypothyroid mothers at a tertiary care hospital," Sanjeev *et al.* have reported the prevalence of TNH

in babies born to "hypothyroid" mothers and their developmental follow-up till 6 months of age.[5] The study is quite relevant in the Indian scenario. However, 67% of the mothers in the study had only SCH and none had their antibody status assessed. While it is important to recommend early screening for hypothyroidism in pregnancy and regular follow-up of babies with TNH, the editorial team feels it is imperative that thyroid screening is extended to all newborns in India, especially when resources are limited.

History of thyroid dysfunction, past or current use of thyroid medications and significant family history of thyroid illness must be enquired in all pregnant women during their first antenatal visit. It is imperative that details of maternal thyroid illness and treatment be documented and communicated to the pediatric team. If logistics permit, it is important to check the maternal thyroid autoimmunity status (TPOAb, anti-thyroglobulin antibodies, and TSH receptor antibodies) as these are IgG antibodies which cross the placenta. Of particular significance is the presence of maternal TSH-R blocking antibodies, which may cause maternal hypothyroidism as well as transient CH in siblings. Transient CH is also known to occur in babies born to mothers with iodine deficiency/excess as well those on antithyroid drugs. Only very small amount of LT4 is transferred through breast milk making it safe for mothers to continue breastfeeding.

It is our hope that universal newborn thyroid screening is instituted as a national policy in India at the earliest as this is one of the most cost-effective newborn screening programs.

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