

Correlation of Maternal Thyroid Parameters During the First Half of Pregnancy and Cord Thyroid Parameters: Are They Associated with Adverse Pregnancy and Child Neuropsychological Outcomes?

ANALYSIS AND COMMENTARY ● ● ● ● ●

The study had three observations of clinical interest. First, the authors mentioned the limited data available on the relations between maternal TH parameters during pregnancy and fetal TH levels. Few studies have analyzed these associations in mothers who had no known thyroid abnormalities but did not find any associations; however, sample sizes were either limited (1) or neonatal TH parameters were determined 2 days after birth, a time at which associations are likely to be influenced by the neonatal TSH surge (2). The authors found a positive correlation between maternal (early in pregnancy) and cord-blood serum TSH and FT₄ measured in 2563 mother-child pairs from euthyroid mothers. These associations could in part be explained by the placental transfer of T₄ as well as by shared factors between mother and child, which are known to influence thyroid parameters, such as genetics and nutrition (e.g., iodine intake). Further studies are needed to correlate maternal and cord-blood thyroid parameters and subsequent neuropsychological development in the child.

Second, serum TSH, FT₄, and T₄ were measured in 5393 pregnant women in an iodine-sufficient population after the exclusion of women with TPOAb positivity, known thyroid disease, use of thyroid-interfering medication, twin pregnancies, and pregnancies after fertility treatment. A TSH level >2.5 mU/L was found in 8.6% of women in the first trimester and a level >3.0 mU/L in 4.9% of women in the second trimester. The authors underlined the importance of using population-specific reference ranges in the diagnosis of thyroid dysfunction in pregnancy, because following the recent recommendations of the ATA guidelines, these women would have been diagnosed as “hypothyroid” (3).

Third, the authors confirmed a previous study of a substantially increased risk of both subclinical and overt hypothyroidism in TPOAb-positive mothers (4). This finding is of significant clinical importance in relation to euthyroid women with Hashimoto’s thyroiditis who are planning a pregnancy, in which case a preconception serum TSH level close to 1 mIU/L would be desirable to prevent the development of hypothyroidism early in pregnancy.

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References

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