



## **IQ SCORES OF CHILDREN EVALUATED BETWEEN AGES 4 AND 14.5 YEARS BORN TO WOMEN WITH SUBCLINICAL HYPOTHYROIDISM WERE SIMILAR TO THE IQS OF CHILDREN BORN TO EUTHYROID TREATED WOMEN**

### **ANALYSIS AND COMMENTARY** ● ● ● ● ●

Maternal and obstetrical complications and impaired neurologic development in children of mothers with thyroid deficiency have been reported in the past 15 years, although results in the final outcomes are not consistent when studies are compared (1). There are many constraints when assessing and comparing published studies, among them lack of consistency in patient selection, methods of thyroid-function testing, reference ranges in defining thyroid dysfunction, iodine status in a given population, and interpretation of outcomes based on only one thyroid test value at a given gestational age. Few published studies correlate obstetrical events with outcomes in newborns. Although universal screening is not recommended by endocrine and obstetrical societies (2, 3), targeting screening of women at risk for thyroid dysfunction is encouraged, but up to 70% of women with thyroid dysfunction will be missed if targeting screening is used (4). One of the most serious potential complications reported is reduction in IQ scores in children born to women with mild hypothyroidism, reported initially by Haddow et al. (5). In their retrospective study, 62 women, whose thyroid tests were measured at 14 to 16 weeks of gestation, had serum TSH above the 97th percentile; 14 of these women were on L-T<sub>4</sub> therapy at the time blood was drawn and supposedly continued with the same dose during their pregnancies, and 48 of them did not receive levothyroxine treatment. The IQ score of the 62 children, evaluated between 7 and 9 years of age was not significantly different from the IQ score of 124 control children. However, a 7-point decrease in IQ scores was detected in the 48 children whose mothers with hypothyroidism did not benefit from thyroid therapy; 19% of them had IQ scores of less than 85%. This suggests that untreated mothers with perhaps more severe thyroid hypofunction were at higher risk to have children with

neuropsychological impairment than were mothers who were receiving therapy, albeit still insufficient to normalize their serum TSH. In the present study by the Azizi group, the authors carefully selected women with hypothyroidism who were receiving thyroid therapy before conception, with the aim to keep their serum TSH  $\leq 2.5$  mIU/L before conception, as recommended by recent guidelines (2, 3). However, at time that pregnancy was confirmed, 25 of 44 women with hypothyroidism (56.8%) who were taking L-T<sub>4</sub> at conception had a serum TSH  $> 3.0$   $\mu$ IU/ml, which supports the finding of the study by Abalovich et al. (6) that a serum TSH  $\leq 1.3$   $\mu$ IU/ml before conception is necessary in the majority of women with hypothyroidism who are on L-T<sub>4</sub> therapy in order to achieve a serum TSH  $\leq 2.5$  mIU/L at the time of the first obstetrical visit. The total IQs of the children of the 19 women with subclinical hypothyroidism, as well as the performance and verbal IQ scores, were not significantly different from those of the control group, which consisted of children of mothers with a serum TSH  $< 3$  mIU/L at the first obstetrical visit. No information is given about the 6 children whose mothers had clinical hypothyroidism. A report from the Controlled Antenatal Thyroid Screening (CATS) (7) study was presented at the most recent ATA meeting by John Lazarus; it suggested no difference in IQ scores in children of women with hypothyroidism at 4 years of age irrespective of whether they received thyroid supplementation during pregnancy. These studies will encourage further discussion among those for and those against universal thyroid screening in pregnancy. Randomized, controlled studies are urgently needed in order to guide physicians concerning when and how (which thyroid tests) to use to evaluate women of reproductive age and what is the proper medical management.

— Jorge H. Mestman, MD


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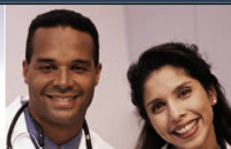
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