



## Prepregnancy Care and Patient Education Are Essential in Women with Thyroid Disease in Order to Prevent Pregnancy Complications

a family history of thyroid disease, or palpation of a goiter and confirmed by the presence of serum TPOAb or TgAb. About 3% to 5% of patients with thyroiditis suffer from thyroid dysfunction, mainly subclinical hypothyroidism. In the majority of cases, this is detected during pregnancy if thyroid tests are ordered routinely. Universal screening for thyroid disease in pregnancy is controversial, but thyroid studies are strongly recommended at the time of the first obstetrical visit for women diagnosed with thyroid dysfunction before pregnancy, those on thyroid replacement therapy, and women with risk factors such as a family history of thyroid disease, autoimmune diseases, presence of goiter, and others (1,2). In the past two decades, numerous publications reported maternal, fetal, and neonatal complications and long-term neuropsychological deficits in children of mothers not properly diagnosed and treated during pregnancy. More alarming is the fact that 50% of women on thyroid replacement therapy have a serum TSH in the hypothyroid reference range when tested during pregnancy (3). The increase in demand for thyroid hormone in pregnancy is very well known, and due mainly to the stimulation of thyroid function by human chorionic gonadotropin (4). A recent paper showed that 80% of women with hypothyroidism who are on levothyroxine therapy before conception achieved a serum TSH within the reference range for gestational age, if the serum TSH within 6 months of conception was less than 1.2 mIU/L, as compared with women with a serum TSH above 1.2 mIU/L (5). Encouraging reports recently published appeared to indicate that correction of maternal hypothyroidism in the second half of pregnancy achieved normal cognitive outcome in the offspring (6,7). The authors of the present study collected data limited to pregnancy outcome in a large multicenter study in women with a history of thyroid disease; however, no information on thyroid status was available at either conception or delivery. As recognized by the authors, the strengths of the study are

its large size and comprehensive data collection from the hospital medical records from the intrapartum admission, allowing for the evaluation and adjustment for important confounding factors. In spite of the limitation in diagnostic and treatment data, the incidence and type of complications are similar to the ones reported in the literature.

Several studies in pregnant women with clinical hyperthyroidism and hypothyroidism showed that normalization of thyroid dysfunction has an impact in decreasing maternal and fetal complications. In this regard, the importance of prepregnancy education in our patients with thyroid disease is imperative; the endocrine community has educated women with prepregnancy diabetes about the importance of planning their pregnancies and achieving the best hemoglobin A1c values possible before conception, with a very successful result in reducing congenital malformations and other pregnancy complications. It is my opinion that the same approach should be used for women with thyroid disease, even if they are not contemplating pregnancy, keeping in mind that over 50% of pregnancies are unplanned. This educational approach should include women: (a) with active hyperthyroidism (contraception until euthyroidism is achieved); (b) on levothyroxine therapy, to achieve a serum TSH target close to 1 mIU/L before conception; (c) with euthyroid chronic thyroiditis, considering levothyroxine therapy if the preconception serum TSH is >1.5 mIU/Lml; and (d) with risk factors for thyroid disease, offering a determination of thyroid tests (including both, TSH and TPOAb). In addition, these women should have thyroid-function tests at the time of pregnancy diagnosis and regularly throughout pregnancy and postpartum as clinically indicated. This approach should reduce pregnancy complications and prevent late offspring neurocognitive dysfunction.


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### References

1. Stagnaro-Green A, Abalovich M, Alexander E, et al. Guidelines of the American Thyroid Association for the diagnosis and management of thyroid disease during pregnancy and postpartum. *Thyroid* 2011;21:1081-125. Epub July 25, 2011.
2. De Groot L, Abalovich M, Alexander E, et al. Management of Thyroid dysfunction during pregnancy and postpartum: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2012;97:2543-65.
3. Hershman JM. Human chorionic gonadotropin and the thyroid: hyperemesis gravidarum and trophoblastic tumors. *Thyroid* 1999;9:653-7.
4. Vadiveloo T, Mires GJ, Donnan PT, Leese GP. Thyroid testing in pregnant women with thyroid dysfunction in Tayside, Scotland: the Thyroid Epidemiology, Audit and Research Study (TEARS). *Clin Endocrinol (Oxf)* 2013;78:466-71.
5. Abalovich M, Alcaraz G, Kleiman-Rubinsztein J, et al. The relationship of preconception thyrotropin levels to requirements for increasing the levothyroxine dose during pregnancy in women with primary hypothyroidism. *Thyroid* 2010;20:1175-8.
6. Momotani N, Iwama S, Momotani K. Neurodevelopment in children born to hypothyroid mothers restored to normal thyroxine (T<sub>4</sub>) concentration by late pregnancy in Japan: no apparent influence of maternal T<sub>4</sub> deficiency. *J Clin Endocrinol Metab* 2012;97:1104-8. Epub February 8, 2012.
7. Downing S, Halpern L, Carswell J, Brown RS. Severe maternal hypothyroidism corrected prior to the third trimester is associated with normal cognitive outcome in the offspring. *Thyroid* 2012;22:625-30. Epub May 10, 2012.


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