

How Effective Are Clinical Guidelines for Hypothyroidism in Pregnancy in Clinical Practice?

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first trimester of pregnancy (91.4%). In only 4 of those 163 women was the dose of levothyroxine increased at an early stage of pregnancy before a thyroid test. Personal and family histories of thyroid disease were the most common reason for thyroid testing in the first trimester (28.9% and 43.6%, respectively); symptoms and clinical signs were the most common reasons for thyroid testing in the second and third trimesters (42.1% and 56.4%, respectively).

Conclusions

The authors concluded that the local guidelines are variable and poorly compliant with international guidelines. Performance of thyroid testing was not optimal, and rates of elevated TSH at testing were extremely high in subgroups.

ANALYSIS AND COMMENTARY ● ● ● ● ●

An article based on Danish nationwide registers that was just published (3) reported that both maternal hyperthyroidism and hypothyroidism were associated with increased risk of preterm birth and other maternal and obstetric complications. The study confirmed data published in the past three decades; in addition, the deleterious effect of maternal thyroid disease, active or inactive (such as women with a previous history of Graves' hyperthyroidism and persistent elevation of TSHRAb), on the fetus, newborn, and offspring is well known to the medical community. Several studies have also shown that controlling thyroid dysfunction in early pregnancy, before the third trimester, may avoid many of these complications (4-8). In order to assist the health care professional in the care of women in their childbearing years, the Endocrine Society published in 2007 recommendations for detecting women at higher risk for thyroid disease early in pregnancy, thyroid tests reference ranges in different trimesters of pregnancy and proper management of thyroid dysfunction (1). The guidelines were revised and published (9) along

with similar recommendations by the American Thyroid Association (2). One clinical situation not well recognized in the medical community is the 30% to 50% increase in thyroid-gland secretion in early pregnancy, which was reported as early as 1990 (10). As the clinical corollary, serum TSH in the hypothyroid range early in pregnancy is consistently reported in about 50% of women on replacement levothyroxine therapy. The observations by Granfors et al. in a country with excellent organization in women's health show that consistency in the diagnosis and management of thyroid disease in pregnancy is lacking; even their own written guidelines, although similar in context to the ones published by the Endocrine Society and the ATA, differ from clinic to clinic. Because the outcomes of these pregnancies were not reported, it is impossible to determine the clinical significance of the lack of medical consistency in diagnosis and treatment. As mentioned in a previous analysis, better education for both medical practitioners and patients may hopefully improve obstetrical and medical outcomes in pregnant women affected by thyroid disease (11).

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References

1. Abalovich M, Amino N, Barbour LA, et al. Management of thyroid dysfunction during pregnancy and postpartum: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 2007;92(8 Suppl):S1-47.
2. 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.
3. Andersen SL, Olsen J, Wu CS, Laurberg P. Low birth weight in children born to mothers with hyperthyroidism and high birth weight in hypothyroidism, whereas preterm birth is common in both conditions: a Danish National Hospital Register study. *Eur Thyroid J* 2013;2:135-44.
4. Millar LK, Wing DA, Leung AS, et al. Low birth weight and preeclampsia in pregnancies complicated by hyperthyroidism. *Obstet Gynecol* 1994;84:946-9.
5. Leung AS, Millar LK, Koonings PP, et al. Perinatal outcome in hypothyroid pregnancies. *Obstet Gynecol* 1993;81:349-53.
6. Laurberg P, Bournaud C, Karmisholt J, Orgiazzi J. Management of Graves' hyperthyroidism in pregnancy: focus on both maternal and foetal thyroid function, and caution against surgical thyroidectomy in pregnancy. *Eur J Endocrinol* 2009;160:1-8. Epub October 10, 2008.
7. Momotani N, Iwama S, Momotani K. Neurodevelopment in children born to hypothyroid mothers restored to normal thyroxine (T₄) concentration by late pregnancy in Japan: no apparent influence of maternal T₄ deficiency. *J Clin Endocrinol Metab* 2012;97:1104-8. Epub February 8, 2012.
8. Downing S, Halpern L, Carswell J, Brown RS. Severe maternal hypothyroidism corrected prior to the third trimester associated with normal cognitive outcome in the offspring. *Thyroid* 2012;22:625-30. Epub May 10, 2012.
9. De Groot L, Abalovich M, Alexander EK, et al. Management of thyroid dysfunction during pregnancy and postpartum: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2012;97:2543-65.
10. Mandel SJ, Larsen PR, Seely EW, Brent GA. Increased need for thyroxine during pregnancy in women with primary hypothyroidism. *N Engl J Med* 1990;323:91-6.
11. Mestman JH. Prepregnancy care and patient education are essential in women with thyroid disease in order to prevent pregnancy complications. *Clin Thyroidol* 2013;25:178-80.