

AMERICAN THYROID ASSOCIATION

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

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Granfors M, Akerud H, Berglund A, Skogö J, Sundström-Poromaa I, Wikström A-K. Thyroid testing and management of hypothyroidism during pregnancy: a population-based study. J Clin Endocrinol Metab 2013;98:2687-92. Epub May 20, 2013.

Background

Recently, guidelines for the management of thyroid diseases in pregnancy (the Endocrine Society [1] and the ATA [2]) were published as well as a survey of European endocrinologists on the treatment and screening of hypothyroidism in pregnancy. The objective of the authors was to assess the integration of international guidelines into local guidelines and also into clinical practice.

Methods

Antenatal care in Sweden is standardized, free of charge, and decentralized to 41 maternity care areas. Within each maternity care area, a consultant in obstetrics is responsible for the development and implementation of guidelines. Twenty-nine different written guidelines were available for thyroid testing and management of thyroid disease. All districts recommended thyroid-function testing based on targeted case finding in high-risk women. A total of 5254 pregnant women delivered in a 3-year period (2009-2011). The guidelines were analyzed with respect to four different aspects: (1) the degree of adherence to the Endocrine Society Guidelines, (2) recommended thyroid-function tests, (3) the trimester-specific TSH upper reference limit for intervention with levothyroxine, and (4) the trimester-specific TSH upper reference limit for monitoring women undergoing treatment with levothyroxine.

Results

All but one district had guidelines on the subject. All local guidelines included fewer than the 10 reasons for thyroid testing recommended by the Endocrine Society Guidelines. Of the local guidelines, only 17.2% recommended thyroid testing solely with TSH. Most guidelines recommended additional types of thyroidfunction tests (free T_4 [75.9%], TPOAb [37.9%], free T_3 [6.9%], and TSH receptor antibodies [6.9%]). Approximately 50% of the local guidelines advocated intervention with levothyroxine when first-trimester TSH exceeded 2.5 mIU/L, which was in accordance with the Endocrine Society Guidelines. In the follow-up, the thyroid-testing rate was 20%, with an 18.5% overall frequency of women with trimester-specific elevated TSH. More than half of the women (50.9%) who were on levothyroxine treatment at conception had an elevated TSH level. The TSH upper reference limits recommended by the local guidelines were significantly lower than those recommended by the Endocrine Society Guidelines. Only 3 of the 29 local guidelines were completely consistent with the international guidelines with respect to TSH trimester-specific upper reference limits for women with ongoing levothyroxine treatment. For women already undergoing levothyroxine treatment at conception, none of the local guidelines contained a recommendation for increasing the L-T₄ dose by 4 to 6 weeks of gestation. Most of the 163 women who were undergoing levothyroxine treatment at the time of conception were tested in the continued on next page

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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