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THYROID AND PREGNANCY

Thyroid dysfunction in pregnancy

BACKGROUND

Thyroid hormone is essential during pregnancy for the baby to develop normally. Maintaining normal thyroid function in the mother during pregnancy is important for the pregnancy to have the best outcomes. Hypothyroidism that is inadequately treated in the mother during pregnancy can lead to premature delivery and other pregnancy complications. Hypothyroid women on thyroid hormone replacement often require adjustments in levothyroxine dosing during pregnancy, usually a higher dose. The best protocol for managing this dose change is unknown, including the magnitude and timing of the dose change. These authors performed a clinical trial to compare two protocols for adjusting thyroid hormone doses in hypothyroid women during pregnancy.

THE FULL ARTICLE TITLE

Sullivan SD et al. Randomized trial comparing two algorithms for levothyroxine dose adjustment in pregnant women with primary hypothyroidism. J. Clin Endocrinol. Metab. 2017. 102: 3499-3507.

SUMMARY OF THE STUDY

These investigators conducted a study of hypothyroid pregnant women living in Washington DC. Pregnant women with hypothyroidism of many causes were enrolled in the study before 11 weeks of the pregnancy and assigned to one of two thyroid hormone adjustment protocols. In Group 1, women increased their thyroid hormone dose by taking two extra doses per week at first presentation during pregnancy, followed by adjustments every two weeks in the first two trimesters then every 4 weeks in the third trimester based on their TSH values. The first dose increase was not based on TSH values but subsequent dose changes did take into account the woman's TSH. Women in Group 2 had their initial thyroid hormone dose change based on their TSH value at presentation and the dose either increased or decreased depending on the result. Dose changes were at the same intervals as Group 1, but instead of changing by dose (or pill number) per week, the dose was changed by micrograms of levothyroxine depending on the TSH.

The average time of study entry was 6.4 weeks of pregnancy for the 34 women that participated in the study. Most women (97%) were less than 10 weeks pregnant at the time of enrollment. The average TSH during the study was 1.5. More women in Group 1 had a suppressed TSH in the first trimester than women in Group 2. However, overall both groups of women had high rates of normal TSH values during their pregnancies (75% of pregnant hypothyroid women were to TSH goal in all 3 trimesters in Group 1 and 81% were to goal in Group 2, difference was not statistically significant). Both groups of women had an average of 3.5 thyroid hormone dose changes per pregnancy. Women with thyroid cancer and Graves' disease required more thyroid hormone dose adjustments than women with Hashimoto's disease or subclinical hypothyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Many hypothyroid women on thyroid hormone replacement therapy require dose adjustments to maintain normal TSH levels during pregnancy. The majority of women in both study groups had TSH values in the desired range during pregnancy. Although more women who had a standard dose increase in early pregnancy (Group 1) by two doses per week had a suppressed TSH in the first trimester, both groups had similar overall success in keeping the TSH in the normal range for each trimester. This study underscores the concept that the overall goal is to maintain a normal TSH during pregnancy in hypothyroid women and that multiple protocols for thyroid hormone dose adjustment can be effective and the choice can be individualized for the woman and the health care provider taking care of her.

— Whitney W. Woodmansee MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: https://www.thyroid.org/hypothyroidism/

Thyroid and Pregnancy: https://www.thyroid.org/thyroid-disease-pregnancy/

THYROID AND PREGNANCY, continued

ABBREVIATIONS & DEFINITIONS

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. The goal is a TSH in the normal range and is the usual therapy.