



## HYPOTHYROIDISM

### Subclinical hypothyroidism and pregnancy outcomes

#### BACKGROUND

Overt hypothyroidism occurs when the TSH is increased and the T<sub>4</sub> level is low. Subclinical hypothyroidism is defined by an increased TSH but a normal T<sub>4</sub>. It is clear that overt hypothyroidism should be treated, especially when diagnosed during pregnancy in the mother. Failure to do so results in problems during pregnancy and interferes with normal development of the baby. It is less clear of the benefits of treating subclinical hypothyroidism, just as it is controversial whether there are any problems with the pregnancy if the mother is not treated. However, treatment of subclinical hypothyroidism in the mother during pregnancy has been recommended in the recently published guidelines of the American Thyroid Association as well as in prior guidelines from the Endocrine Society and the European Thyroid Association. The current study investigated the harms and benefits associated with the treatment of subclinical hypothyroidism during pregnancy.

#### THE FULL ARTICLE TITLE

Maraka S et al, Thyroid hormone treatment among pregnant women with subclinical hypothyroidism: US national assessment. *BMJ* 2017;356:i6865.

#### SUMMARY OF THE STUDY

Data was collected in this study from a database of privately insured and Medicare advantage enrollees throughout the United States. The study included women in the age group of 18 to 55 years with a TSH level between 2.5 to 10 mU/L. All women had normal T<sub>4</sub> levels. Treatment was associated with a reduced risk of pregnancy loss in women with a TSH level between 4.1 to 10 but not for a TSH of 2.5 to 4. A

total of 5405 women with subclinical hypothyroidism were identified; 843 (15.6%) started levothyroxine treatment with an average dose of 50 µg, 7 (0.8%) with thyroid extract formulation and 4 (0.5%) with a combination of levothyroxine and liothyronine. The remaining 4562 women (84.4%) were not treated with thyroid hormone. The percentage of women treated increased from 12% in 2010 to 19% in 2014. Of the 843 women who were treated, 719 (85.3%) had at least one follow up TSH test and 130 (18.0%) had a TSH concentration above 3 mU/L.

Treatment was associated with a lower risk of pregnancy loss but a higher risk of premature delivery, diabetes and high blood pressure during pregnancy and in high heart rates.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that treatment of subclinical hypothyroidism was associated with a lower risk of pregnancy loss, especially in women with TSH concentrations of 4.1 to 10 mU/L prior to treatment. Mild increases in blood pressure, heart rate and diabetes during pregnancy were also seen. This study provides additional information to help determine to need to treat women diagnosed with subclinical hypothyroidism during pregnancy.

—Vibhavasu Sharma, MD

#### ATA THYROID BROCHURE LINKS

Thyroid Disease and Pregnancy: <http://www.thyroid.org/thyroid-disease-pregnancy/>

Thyroid Function Tests: <http://www.thyroid.org/thyroid-function-tests/>

#### ABBREVIATIONS & DEFINITIONS

**Subclinical Hypothyroidism:** a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated

**TPO antibodies:** these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

**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.

**Thyroxine (T<sub>4</sub>):** the major hormone produced by the thyroid gland. T<sub>4</sub> gets converted to the active hormone T<sub>3</sub> in various tissues in the body. Free T<sub>4</sub> is the proportion of this hormone not bound to a protein in the blood.