HYPERTHYROIDISM

When and how to use antithyroid drugs during the first trimester of pregnancy

BACKGROUND:
Antithyroid drugs, such as methimazole (MMI) and propylthiouracil (PTU) have been used to treat hyperthyroidism during pregnancy. The American Thyroid Association and the Endocrine Society guidelines recommend using PTU in the 1st half of pregnancy if drug treatment is needed due to a greater frequency of birth defects with MMI. This increased risk of birth defects with MMI is very small as a Food and Drug Administration review of all pregnancies between 1969-2009 found 29 reports of birth defects associated with MMI use in the first trimester of pregnancy as compared to 9 reports of PTU-associated birth defects. Two more recent studies have found a higher rate of birth defects (2-4%) in children exposed to MMI during the first trimester of pregnancy and one of these also reported some cases of PTU-associated birth defects. However, four other recent studies have not found an association between the use of antithyroid drugs during pregnancy and the development of birth defects. The present article analyzes these recent 6 studies to explain the different results found in an attempt to determine if there is actually an increased risk of birth defects with antithyroid drugs.

THE FULL ARTICLE TITLE:

SUMMARY OF THE STUDY:
The two studies that showed an association between MMI use and birth defects included a much larger number of children exposed to MMI during the first trimester of pregnancy (1231 and 1907 children, respectively) as compared to the four studies that found no association (73, 108, 30, and 124 children, respectively). In addition, the studies that found no association looked only for certain major birth defects and not the minor ones specifically associated with antithyroid drug use in the prior studies.

The study that reported PTU-associated birth defects did not include more children as compared to the other studies (564 children versus 1399, 603, 915, 507, 52 children exposed to PTU, respectively); however, this study evaluated children over a longer period of time, up to two years of age, while the other studies evaluated children up to maximum one year of age. The study also reported some cases of PTU-associated birth defects. However, four other recent studies have not found an association between the use of antithyroid drugs during pregnancy and the development of birth defects. The present article analyzes these recent 6 studies to explain the different results found in an attempt to determine if there is actually an increased risk of birth defects with antithyroid drugs.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?
The studies that found no association between the use of antithyroid drugs in early pregnancy and birth defects in the offspring did not include enough subjects and did not follow the children for a long enough period of time to detect these abnormalities. In summary, it appears that as many as 2-4% of children exposed to MMI in the first trimester of pregnancy may develop birth defects, some of them being severe. PTU use in early pregnancy can also result in birth defects at a much lower rate. Because of the increased risk of birth defects with MMI as compared to PTU, the American Thyroid Association and the Endocrine Society guidelines recommend to use PTU to treat hyperthyroidism in the first trimester of pregnancy and then switch to MMI for the rest of the pregnancy. Certainly, as is the case with all medications during pregnancy, if antithyroid drugs are needed, they should be limited to the lowest effective dose possible during the first trimester of pregnancy. As previously recommended, PTU and not MMI is the preferred antithyroid drug for use in early pregnancy if needed, since it results in less frequent birth defects.

— Alina Gavrila, MD, MMSC

ATA THYROID BROCHURE LINKS
Hyperthyroidism: http://www.thyroid.org/hyperthyroidism/
Thyroid and Pregnancy: http://www.thyroid.org/thyroid-disease-pregnancy/
Clínica de la Tiroides para el Público

Un ejemplar de la revista de la Tiroides para el Público

Hipermetabolismo, continuación

**ABREVIACIONES & DEFINICIONES**

**Hipermetabolismo:** un estado en el que la glándula tiroides es activa y produce demasiada hormona tiroides. Hipermetabolismo puede tratarse con medicamentos antitiroides (Metimazol, Propiltiouracilo), radiactividad de iodo o cirugía.

**Medicamento antitiroides:** medicamento que bloquea la glándula tiroides para que no produzca hormona tiroides.

**Metimazol:** un medicamento antitiroides usado para tratar hipermetabolismo, especialmente cuando se produce por enfermedad de Graves.

**Propiltiouracilo (PTU):** un medicamento antitiroides usado para tratar hipermetabolismo, especialmente en primeros meses de embarazo.

**Período neonatal:** el primer mes de vida.

**Thyroid Awareness Monthly Campaigns**

El ATA estará resaltando un trastorno tiroides distinto cada mes y una proporción de las ventas de Bravelets™ se donará al ATA. El mes de enero es **Mes de Conciencia Tiroides** y un brazalete está disponible a través del **ATA Marketplace** para soporte de la conciencia del cáncer de tiroides y educación relacionada con trastornos tiroides.