



THYROID AND PREGNANCY

Thyroid cancer diagnosed during pregnancy or shortly after may be associated with a worse outcome

WHAT IS THE STUDY ABOUT?

Thyroid cancer is the fastest rising cancer being diagnosed in women. It is well recognized that thyroid nodules that contain thyroid cancer may grow faster during pregnancy than in the non-pregnant state. It is unclear exactly what the signals are that produce this increased growth, although some investigators suggest that the increased estrogen levels during pregnancy plays a role. Despite this increased growth, a previous study published in 1997 showed that women diagnosed with thyroid cancer during pregnancy have similar prognosis as compared to women diagnosed with thyroid cancer before or after pregnancy. In this study, the authors examine whether estrogen has an effect on thyroid cancer and re-examine outcomes of thyroid cancer diagnosed during pregnancy.

THE FULL ARTICLE TITLE:

Vannucchi et al. Clinical and molecular features of differentiated thyroid cancer diagnosed during pregnancy. *Eur J Endocrinol* 2010;162:145-51.

WHAT WAS THE AIM OF THE STUDY?

The aims of this study were: 1) to determine whether estrogen has an effect on thyroid cancer and 2) to re-examine outcomes of thyroid cancer diagnosed during pregnancy.

WHO WAS STUDIED?

The study group included 123 women diagnosed with thyroid cancer between 1996 and 2005 at a single institution in Italy. The women were treated with similar surgery and received subsequent Radioactive Iodine therapy. The women were divided into 3 groups: Group 1: Thyroid cancer diagnosed at least one year after pregnancy (47 patients), Group 2: Thyroid cancer diagnosed during pregnancy or up to one year after delivery (15 patients) and Group 3: Thyroid cancer diagnosed before pregnancy (61 patients).

HOW WAS THE STUDY DONE?

All women underwent a total thyroidectomy. The cancers from these women were examined for the presence of receptors for estrogen and for certain genetic mutations.

The following women were treated with radioactive iodine: 80.8% in Group 1, 100% in Group 2 and 86.9% of women in Group 3. The thyroid cancer was followed over time with: 1) blood tests for thyroglobulin, 2) neck ultrasounds and 3) whole body scans.

WHAT WERE THE RESULTS OF THE STUDY?

While the most common thyroid cancer was papillary cancer, 3 women (20%) in Group 2 had follicular cancer as compared 1 woman each (~2%) in Groups 1 and 3. Almost all cancers from Group 2 contained receptors for estrogen as compared to 1/3 of cancers in Group 1 and none in Group 3. The women in Group 2 were more likely to have spread of the cancer outside of the thyroid or into the lymph nodes at the time of surgery. Most women were followed for ~5 years. At the end of the study period, 60% of women in Group 2 had persistent or recurrent cancer as compared to only 4.2% in Group 1 and 13% in Group 3. The authors concluded that the worse outcomes may be related to the increased estrogen exposure during pregnancy.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

As mentioned above, a previous study in 1997 suggested that thyroid cancer diagnosed during pregnancy has a similar prognosis as compared to women diagnosed with thyroid cancer before or after pregnancy. The current study is the first study to demonstrate a worse outcome for women diagnosed with thyroid cancer during pregnancy. An important difference between the 2 studies is that the 1997 study followed women for >22 years while the average follow-up in the current study was only 5 years.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Thyroid cancer diagnosed during pregnancy may be associated with a higher chance of persistent or recurrent cancer over time, possibly due to an effect of estrogen. These data suggest that these women may need to be treated more aggressively after their pregnancy.

— Mona Sabra, MD

continued on next page



THYROID AND PREGNANCY, continued

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

Thyroid and Pregnancy: http://thyroid.org/patients/patient_brochures/pregnancy.html

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer — the most common type of thyroid cancer.

Follicular thyroid cancer — the second most common type of thyroid cancer.

Thyroglobulin — a protein made only by thyroid cells, both normal and cancerous. When all normal thyroid tissue is destroyed after radioactive iodine therapy in patients with thyroid cancer, thyroglobulin can be used as a thyroid cancer marker.

Estrogen — the main female hormone. Estrogen levels are increased during pregnancy.

Thyroidectomy — Surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

Radioactive iodine (RAI) — this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).