CLINICAL THYROIDOLOGY FOR PATIENTS

AMERICAN THYROID ASSOCIATION
FOUNDED 1923

VOLUME 3 • ISSUE 4 • APRIL 2010

www.thyroid.org

HOW TO NAVIGATE THIS DOCUMENT:

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CLINICAL THYROIDOLOGY **FOR PATIENTS**
A publication of the American Thyroid Association
VOLUME 3 • ISSUE 4 • APRIL 2010

EDITOR'S COMMENTS

Welcome to *Clinical Thyroidology for Patients*. This publication is a collection of summaries of the top articles from the recent medical literature that cover the broad spectrum of thyroid disorders. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in the previous month's issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, will be getting the latest information on thyroid research and treatment almost as soon as your physicians.

The Calendar of Events highlights educational forums and support groups that are organized by members of the Alliance for Thyroid Patient Education. The Alliance member groups consist of: the *American Thyroid Association*, the *Graves' Disease Foundation*, the *Light of Life Foundation* and *ThyCa: Thyroid Cancer Survivors Association*.

IMPORTANT MEETINGS NOTICE In the next 2 months there are three national meetings that I would like to bring to your attention. Please see details on all three of these meetings later in this issue.

First is a telephone workshop entitled: Treatment Update on Thyroid Cancer (link is http://www.cancercare.org/get_help/tew_details.php?tew=thyroid_050510). The workshop will take place on May 5 from 1:30 – 2:30 PM Eastern Time.

Next, I would like to invite all of you to attend the Annual Alliance Patient Educational Forum at the Hyatt Regency Minneapolis on Saturday May 15 from 1:30 – 3 PM. Come and get answers to your questions about thyroid disease diagnosis and management.

Third is a Multiple Endocrine Neoplasia Patient Education Conference at the MD Anderson Cancer center in Houston on Saturday June 26 from 8:30 AM – 3:15 PM.

In this issue, studies ask the following questions:

- What is the best predictor of prognosis in thyroid cancer in children?
- What are the risk factors for the development of hypothyroidism?
- Are patients with thyroid disease at risk for other autoimmune diseases?
- What effect does pregnancy have on thyroid cancer?
- What is the best way to treat thyroid cancer during pregnancy?

We welcome your feedback and suggestions. Let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

—Alan P. Farwell, MD

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THYROID CANCER

In children with thyroid cancer, the initial surgery has the most impact on risk of recurrence

WHAT IS THE STUDY ABOUT?

Thyroid cancer is uncommon in children. However, children often have more extensive disease as compared to adults. Despite this, most children have a good prognosis and usually have a long life expectancy that is minimally affected by the thyroid cancer. The usual course of treatment in adults include 1) surgery to remove most of the thyroid, 2) thyroid hormone suppression therapy and 3) radioactive iodine therapy in most cases. Children may have more complications from surgery and may not tolerate high doses radioactive iodine. The aim of the study was to determine how surgical therapy and radioactive iodine affect the outcome of thyroid cancer in children.

THE FULL ARTICLE TITLE:

Hay et al. Long-term outcome in 215 children and adolescents with papillary thyroid cancer treated during 1940 through 2008. World J Surg 2010; 20. (Epub ahead of print)

WHAT WAS THE AIM OF THE STUDY?

The aim of the study was to determine how surgical therapy and radioactive iodine affect the outcome of thyroid cancer in children.

WHO WAS STUDIED?

The study group included 215 patients younger than age 21 who had surgery for thyroid cancer at the Mayo Clinic during a 68-year period from 1940 to 2008.

HOW WAS THE STUDY DONE?

The records of patients were reviewed as to the patient's initial presentation, treatment and pathology of their cancer. Follow-up information was obtained by correspondence with the patients, family, or attending physicians and by a review of death certificates.

WHAT WERE THE RESULTS OF THE STUDY?

A total of 96 (45%) children had a near-total thyroidectomy while 82 (38%) had a total thyroidectomy. A total of 185 (86%) also had surgery to remove the lymph nodes in the neck. A total of 192 of the 215 patients (89%) had the cancer confined to the neck and had it completely removed. Of these 192 patients, 68 (35%) were treated with radioactive iodine and all were still living after 40 years. There was only one death from thyroid cancer in the patients that were not treated with radioactive iodine. Recurrence of the cancer was found in 61 patients (32%). In general, the outcome of disease was not significantly different between children who had been treated with radioactive iodine after the surgery and those without radioactive iodine. Overall, 15 children died of cancer other than thyroid cancer – 11 of these (73%) children had received radiation after surgery. However, only 2 received only radioactive iodine while 7 also received either external beam irradiation or radiation implants (in the 1940s).

HOW DOES THIS STUDY COMPARE WITH OTHER STUDIES?

Several other studies have shown the impact of thyroidectomy with selective removing of lymph-nodes on outcome of children with thyroid cancer. There are also several studies showing the impact of radioactive iodine on the outcome of this disease. The potential second cancer risk of radioactive iodine appears to be dependent upon the administered amount of I-131. The radiation to the whole body can be reduced when the patients are prepared with recombinant human TSH before the radioactive iodine. In addition, whole-body radiation can also be lowered by using smaller amounts of radioactive iodine, as little as 30-50 mCi, which has been shown to be as effective as 100 mCi.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that in children with thyroid cancer, the extent of the initial surgery and the presence of spread of the cancer to the neck lymph nodes has the greatest impact on the clinical outcome. Importantly, clinical outcome does not appear to be affected by radioactive iodine in most cases.

— Jamshid Farahati, MD

ATA THYROID BROCHURE LINKS

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

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THYROID CANCER, continued

ABBREVIATIONS AND DEFINITIONS

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.

Near-total thyroidectomy — removal of nearly all of each thyroid lobe, leaving only a small portion of the thyroid gland.

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).

mCi — millicurie, the units used for I-131.

Lymph node — bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

Cancer recurrence — this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.

HYPOTHYROIDISM

What are the risk factors for the development of hypothyroidism?

WHAT IS THE STUDY ABOUT?

Hypothyroidism occurs when the thyroid gland is underactive and doesn't produce enough thyroid hormone. It is one of the most common endocrine disorders diagnosed and treated by endocrinologists and primary care physicians. Treatment decisions are based upon clinical symptoms supported by blood tests, specifically levels of TSH. The normal range of TSH plays a big role in the diagnosis of hypothyroidism. This is especially true for subclinical hypothyroidism when an increased TSH level is the only abnormality and the thyroid hormone levels are normal. It is somewhat controversial which patients with subclinical hypothyroidism will become clearly hypothyroid and should be treated with thyroid hormone replacement. This study is designed to determine which patient risk factors and blood tests can be used to predict the development of hypothyroidism and whether a change in the normal range for TSH is needed.

THE FULL ARTICLE TITLE:

Walsh et al. Thyrotropin and Thyroid Antibodies as Predictors of Hypothyroidism: A 13-Year Longitudinal Study of a Community-Based Cohort Using Current Immunoassay Techniques. J Clin Endocrinology Metabolism: March, 2010, Volume 95, Number 3, pp 1095-1104.

WHAT WAS THE AIM OF THE STUDY?

The aim of the study is to determine what are the risk factors for the future development of hypothyroidism.

WHO WAS STUDIED?

The study group included 1184 individuals in a small western Australian town (Busselton) who completed a survey and gave blood samples in 1981 and 1994, none of whom had been previously diagnosed with hypothyroidism.

HOW WAS THE STUDY DONE?

Participants completed a health survey and had blood drawn in 1981 and again in 1994. All blood samples were then tested for TSH, Free T_4 and TPO antibodies. TPO antibodies are used to diagnose autoimmune thyroid disease, which is the most common cause of hypothyroidism in the United States.

WHAT WERE THE RESULTS OF THE STUDY?

A total of 1110 individuals had a TSH <4 in 1981 (93.7%). In 1994, 110 of these individuals were either on thyroid hormone or had a TSH >4 (9.3%). In 1981, 11.1% of the individuals had positive thyroid antibodies. In 1994, 15.1% had positive thyroid antibodies. The main risk factors for developing hypothyroidism included: 1) being female, 2) having a TSH initially between 2.5-4 and 3) positive thyroid antibodies. Only 3% of individuals with an initial TSH < 2.5 and negative thyroid antibodies developed hypothyroidism over the 13 year period. In contrast, 55% of individuals with a TSH 2.5-4.0 and positive thyroid antibodies developed hypothyroidism. While most of the individuals with an initial TSH >4 in 1981 were hypothyroid in 1994, 14% had a TSH <4 without being treated.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies have demonstrated the increased risk of developing hypothyroidism in the presence of positive thyroid antibodies and TSH > 2.0. Other studies also have reported that TSH rises with age without the development of hypothyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The presence of "high normal" TSH (2.5-4.0) with positive thyroid antibodies is a useful predictor of future hypothyroidism, especially in women. A patient with these lab results should be tested more frequently in order to diagnose and treat hypothyroidism before significant and prolonged symptoms develop.

— Jerrold Stock, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

Thyroid Function Tests: http://thyroid.org/patients/patient_brochures/function_tests.html

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HYPOTHYROIDISM, 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.

Hashimoto's thyroiditis — the most common cause of hypothyroidism 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.

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.

Thyroxine (T_4) — the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

AUTOIMMUNE THYROID DISEASE

Patients with autoimmune thyroid disease have an increased risk for other autoimmune diseases

WHAT IS THE STUDY ABOUT?

The most common forms of autoimmune thyroid disease are Hashimoto's thyroiditis and Graves' disease. Hashimoto's thyroiditis (also known as chronic thyroiditis) may lead to hypothyroidism, while Graves' disease is usually associated with hyperthyroidism. Both of these disorders may be associated with other autoimmune problems including Type 1 diabetes mellitus, Addison's disease (adrenal insufficiency), vitiligo (loss of pigment of some areas of the skin), systemic lupus erythematosus, pernicious anemia, celiac disease, inflammatory bowel disease, myasthenia gravis, multiple sclerosis and rheumatoid arthritis. The present study examined a large number of patients with autoimmune thyroid disease in order to determine the risk for other autoimmune disorders and the factors which are associated with the risk for and the type of other autoimmune problems.

THE FULL ARTICLE TITLE:

Boelaert et al. Prevalence and relative risk of other autoimmune diseases in subjects with autoimmune thyroid disease. Am J Med 2010;123:183.e1-9.

WHAT WAS THE AIM OF THE STUDY?

The aim of this study is to determine the risk for other autoimmune disorders in patients with autoimmune thyroid disease.

WHO WAS STUDIED?

A total of 3286 individuals with autoimmune thyroid disease were recruited from an onoging study in England on autoimmune thyroid disease. In this group, 85% had Graves' disease and 15% had Hashimoto's thyroiditis.

HOW WAS THE STUDY DONE?

Patients who stated that they had autoimmune thyroid disease filled out a questionnaire and had their medical records and medications reviewed by a physician. The type of underlying autoimmune thyroid disease was recorded, as well as gender, age and parents' history of hyperthyroidism or hypothyroidism and any associated autoimmune disorders.

WHAT WERE THE RESULTS OF THE STUDY?

About 10% of patients with Graves' disease and 14% with Hashimoto's thyroiditis had another autoimmune disorder. The most common associated autoimmune disorder for both conditions was rheumatoid arthritis. Patients with Hashimoto's thyroiditis had a 10-fold higher risk for Addison's disease and a 3-fold increased risk for pernicious anemia compared to Graves' disease. Men with Graves' disease had higher rates of Type 1 diabetes and myasthenia gravis compared to women, while women, but not men, with Graves' disease had an increased risk for Addison's disease, celiac disease and multiple sclerosis. A total of 17.5% of mothers of patients with Graves' disease and 23.6% of mothers with children with Hashimoto's thyroiditis had a history of thyroid dysfunction. In contrast, 3.1% and 5.7% of the fathers of patients with either Graves' disease or Hashimoto's thyroiditis, respectively, had thyroid dysfunction. Graves' disease and Hashimoto's thyroiditis were more common in the parents of patients with autoimmune thyroid disease than in the regular UK population. Parents of patients with Hashimoto's thyroiditis also had an increased prevalence of inflammatory bowel disease.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Several other studies have found an association between autoimmune thyroid disease and other autoimmune diseases. This study with more than 3000 patients is the largest study to examine the relationship and quantify the risk.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Other autoimmune disorders should be considered in patients with autoimmune thyroid disease who develop new or nonspecific symptoms. Also, there should be additional genetic research studies to try and locate a gene or genes that make a patient susceptible for multiple autoimmune disorders.

— Glen Braunstein, MD

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AUTOIMMUNE THYROID DISEASE, continued

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

Graves disease: http://thyroid.org/patients/patient_brochures/graves.html

Thyroiditis: http://thyroid.org/patients/patient_brochures/thyroiditis.html

ABBREVIATIONS & DEFINITIONS

Graves' disease — the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

Hashimoto's thyroiditis — the most common cause of hypothyroidism in the United States. It is caused by antibodies that attack the thyroid and destroy the gland.

Antibodies — proteins that are produced by the body's immune cells that attack and destroy bacteria and viruses that cause infections. Occasionally the antibodies get confused and attack the body's own tissues, causing autoimmune disease.

Autoimmune disorders — A diverse group of disorders that are caused by antibodies that get confused and attack the body's own tissues. The disorder depends on what tissue the antibodies attack. Graves' disease and Hashimoto's thyroiditis are examples of autoimmune thyroid disease. Other Autoimmune disorders include: Type 1 diabetes mellitus, Addison's disease (adrenal insufficiency), vitiligo (loss of pigment of some areas of the skin), systemic lupus erythematosus, pernicious anemia (B12 deficiency), celiac disease, inflammatory bowel disease, myasthenia gravis, multiple sclerosis and rheumatoid arthritis.

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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

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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).

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THYROID AND PREGNANCY

Management of thyroid cancer during pregnancy

WHAT IS THE STUDY ABOUT?

Thyroid cancer is the fasting rising cancer diagnosed in women. The incidence of thyroid cancer in women has been steadily increasing for the past three decades, peaking in women during their mid-40s. Because of this, thyroid cancer and thyroid nodules are an especially important problem during the reproductive years in women. In fact, about 10% of thyroid cancers occurring during the reproductive years are diagnosed during pregnancy or the first year after delivery. A study by Vannuchi et al. that is highlighted in this issue of *Clinical Thyroidology for Patients* suggests that pregnancy may have a negative impact on the outcome of papillary thyroid cancer. This leads to a number of new and important questions concerning the clinical management of thyroid cancer in pregnant women. Unlike other papers that are usually summarized in this journal, which are stand-alone clinical studies or reports, this is a review of several prior studies and reports. The aim of this paper is to review the current state-of-the-art of treatment for thyroid cancer in the pregnant woman.

THE FULL ARTICLE TITLE:

Holt EH. Care of the pregnant thyroid cancer patient. Curr Opin Oncol 2010;22:1-5.

WHAT WAS THE AIM OF THE STUDY?

The aim of this paper is to review the current state-of-the-art for treatment of thyroid cancer in the pregnant woman.

HOW WAS THE STUDY DONE?

This paper reviews the Endocrine Society Guidelines on care of pregnant patients with thyroid nodules or thyroid cancer published in 2007, summarizes the data presented in a symposium on thyroid dysfunction and pregnancy hosted by the American Thyroid Association in April 2009 and reviews recent studies on thyroid cancer and hypothyroidism on the baby and the impact of surgery, radioiodine and levothyroxine therapy in both mother and baby.

Guidelines for Thyroid Cancer during Pregnancy

The following features on care of pregnant patients with thyroid nodules or thyroid cancer are highlighted:

1) Thyroid nodules ≥1 cm should be evaluated with fine-needle aspiration biopsy. This is the same recommendation as in the non-pregnant patient.

2) Women with cancer on the biopsy or rapidly growing thyroid nodules can be offered surgery in the second trimester. However, as thyroid nodules and thyroid cancer in general are not expected to progress rapidly, the risk of surgery might outweigh the benefits of immediate surgery. Thus, it might be appropriate for women to wait until after delivery for surgery. In a recent study, pregnant women in general had more complications following thyroid surgery than non-pregnant women.

3) Women with thyroid cancer who become pregnant should have a consistently low but measurable TSH level during pregnancy.

4) Women who are breast-feeding should wait 6 to 12 months before being treated with radioactive iodine therapy, if that treatment is indicated.

5) Women should wait 6 to 12 months after radioactive therapy before becoming pregnant.

6) During pregnancy, women who have had part of their thyroid removed (ie removal of 1 lobe) and do not require thyroid hormone replacement before becoming pregnant should be screened for hypothyroidism and may require thyroid hormone therapy during pregnancy.

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THYROID AND PREGNANCY, continued

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Thyroid cancer in the pregnant woman is a unique problem in which endocrinologists, surgeons, gynecologists and primary care physicians often are involved. All these providers must be aware of the many issues to properly advise the patient in making a decision that is best for her and her baby.

— Alan P. Farwell, MD

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.

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).

Thyroid hormone therapy — patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to normal. Replacement therapy means the goal is a TSH in the normal range and is the usual therapy. Suppressive therapy means that the goal is a TSH below the normal range and is used in thyroid cancer patients to prevent growth of any remaining cancer cells.

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.

ATA Alliance for Thyroid Patient Education

GOAL

The goal of our organizations is to provide accurate and reliable information for patients about the diagnosis, evaluation and treatment of thyroid diseases.

WHO WE ARE

AMERICAN THYROID ASSOCIATION

www.thyroid.org
ATA Patient Resources: http://www.thyroid.org/patients/
Find a Thyroid Specialist: www.thyroid.org
Phone (toll-free): 1-800-THYROID
e-mail: thyroid@thyroid.org

ATA Mission: The ATA leads in promoting thyroid health and understanding thyroid biology.
ATA Vision: The ATA is the leading organization focused on thyroid biology and the prevention and treatment of thyroid disorders through excellence and innovation in research, clinical care, education, and public health.
ATA Values: The ATA values scientific inquiry, clinical excellence, public service, education, collaboration, and collegiality.

To further our mission, vision and values the ATA sponsors "Friends of the ATA" online to advance the information provided to patients and the public such as this publication, Clinical Thyroidology for Patients. We welcome your support.

GRAVES' DISEASE FOUNDATION

www.ngdf.org
Phone (toll-free): 1-877-NGDF-123 or 643-3123
e-mail: Gravesdiseasefd@gmail.com

Founded in 1990, the Graves' Disease Foundation offers support and resources to Graves' disease patients, their families, and health care professionals. Their mission is to find the cause of and the cure for Graves' thyroid disease through research, to improve the quality of life for persons with Graves' disease and their caregivers and to educate persons with Graves' disease, their caregivers, healthcare professionals, and the general public about Graves' disease and its treatment. The web site features a monitored bulletin board.

LIGHT OF LIFE FOUNDATION

www.checkyourneck.com
email: info@checkyourneck.com

The Light of Life Foundation, founded in 1997, is a nonprofit organization that strives to improve the quality of life for thyroid cancer patients, educate the public and professionals about thyroid cancer, and promote research and development to improve thyroid cancer care.

THYCA: THYROID CANCER SURVIVORS' ASSOCIATION, INC.

www.thyca.org
Phone (toll-free): 877 588-7904
e-mail: thyca@thyca.org

ThyCa: Thyroid Cancer Survivors' Association, Inc., founded in 1995, is an international nonprofit organization, guided by a medical advisory council of renowned thyroid cancer specialists, offering support and information to thyroid cancer survivors, families, and health care professionals worldwide.

AMERICAN THYROID ASSOCIATION FOUNDED 1923
Graves' Disease Foundation
Light of Life Foundation checkyourneck.com
ThyCa

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ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS

Educational forums, patient support groups and other patient-oriented meetings

ATA Conferences www.thyroid.org

Saturday, May 15, 2010 — Hyatt Regency, Minneapolis, Minnesota
ATA Alliance for Thyroid Patient Education Public Forum

Graves' Disease Conferences www.ngdf.org

Fall 2010 — San Diego, CA
Annual Meeting

Light of Life Foundation www.checkyourneck.com

Saturday, June 12, 2010, 8:30 am – 3:30 pm — Memorial Sloan Kettering Cancer Center, New York, NY
Light of Life Foundation Patient Education Day

ThyCa Conferences www.thyca.org

Saturday, May 1, 2010 — Stowe, Vermont
Vermont/New England Thyroid Cancer Survivors' Symposium
Co-sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. and Stowe Weekend of Hope

Saturday, May 22, 2010 — Baltimore, Maryland
9th Annual Mid-Atlantic Thyroid Cancer Survivors' Workshop
Free one-day educational event. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

Saturday, May 29, 2010 — St. John's, Newfoundland, Canada
Newfoundland and Labrador Thyroid Cancer Survivors' Workshop
Free one-day educational event. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

June 4–5, 2010 — Rockville, Maryland
Hypoparathyroidism Association Patient Conference
At the Rockville Hilton Hotel, Rockville, Maryland; Details at www.hypoparathyroidism.org.

Saturday, June 26, 2010 — Houston, TX
Multiple Endocrine Neoplasias Patient Education Conference
The University of Texas M. D. Anderson Cancer Center

September 2010
Thyroid Cancer Awareness Month
Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Plus year-round awareness campaigns.
Visit the Raise Awareness Page to download free flyers, or request free awareness materials.

October 15–17, 2010 — Dallas, Texas.
The 13th International Thyroid Cancer Survivors' Conference
Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

October 16, 2010 — Dallas, Texas
The 8th Annual Dinner/Auction Fundraiser for Thyroid Cancer Research
Thyroid Cancer Survivors' Conference. Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

M. D. Anderson Cancer Center www.mdanderson.org/departments/ccg

Saturday, June 26, 2010 — Houston, TX
Multiple Endocrine Neoplasias Patient Education Conference
The University of Texas M. D. Anderson Cancer Center

CancerCare is a national nonprofit organization that provides free, professional support services for anyone affected by cancer.

Treatment Update on Thyroid Cancer

Connect Education Workshop Details —

On Wednesday, May 5th, CancerCare, in partnership with the American Thyroid Association, will present a free Connect Education Telephone Workshop, Treatment Update on Thyroid Cancer. It will take place from 1:30 to 2:30pm Eastern Time.

Please join us as our expert faculty address an overview of thyroid cancer, diagnosis and staging, treatment options, clinical trials, novel approaches to treat refractory thyroid cancer, managing treatment side effects and pain, and much more.

You can listen to this workshop over the telephone or online. The workshop is FREE and no phone charges apply. To register, simply go to the CancerCare website at http://www.cancercare.org/get_help/tew_details.php?tew=thyroid_050510 , or call 1-800-813-4673.

The featured speakers for this program are:

Keith Eaton, MD, PhD, Assistant Professor, Thoracic/Head & Neck Cancer, Division of Oncology, University of Washington Seattle Cancer Care Alliance, Assistant Member, Clinical Research Division, Fred Hutchinson Cancer Research Center

Danielle L. Baham, MS, RD, LD, Senior Clinical Dietitian, Department of Clinical Nutrition, The University of Texas MD Anderson Cancer Center

Marcia S. Brose, MD, PhD, Assistant Professor, Department of Otorhinolaryngology: Head & Neck Surgery Department of Medicine, Division of Hematology/Oncology, Abramson Cancer Center

Carolyn Messner, DSW, MSW, Director of Education and Training, CancerCare

We are very excited to bring this program to you and hope that you'll join us!

FREE Public Health Forum

Thyroid Experts from the American Thyroid Association, and Thyroid Patients join together to inform the general public, thyroid patients, and their friends and families about:

Thyroid Disease and You

Concerned about low energy? memory loss? ... fatigue? … depression … rapid heart beat … restlessness … infertility ... weight or hair changes …a lump on your neck? Could it be your thyroid?

Saturday, May 15, 2010, 1:30 p.m. – 3:00 p.m.

Hyatt Regency Minneapolis
1300 Nicollet Mall
Minneapolis, Minnesota 55403
Phone: (612) 370-1234

Physician experts will discuss thyroid disorders

This program is free and all are welcome, including walk-in-attendees. Reservations are encouraged to ensure we have enough seating. For more Information and to register e-mail to ThyCa at thyca@thyca.org

Who should attend?

Anyone who has had an overactive or underactive thyroid, thyroiditis, Graves' disease, a thyroid nodule, thyroid cancer, or a family history of thyroid problems or related disorders, including rheumatoid arthritis, juvenile diabetes, pernicious anemia, or prematurely gray hair (starting before age 30).

Please come if you have questions, symptoms, or concerns about a thyroid problem. Receive free educational materials.

Reservations requested; Walk-ins welcome

E-mail thyca@thyca.org to RSVP
(Please indicate in your message the thyroid condition you are most concerned about.)

Online educational information for patients is provided by all members of the ATA Alliance for Patient Education co-sponsoring this forum: ThyCa: Thyroid Cancer Survivors' Association, Light of Life Foundation, and Graves' Disease Foundation.

Go online to www.thyroid.org and click on Patients and Public to access the resources you need.

Please Join Us

Multiple Endocrine Neoplasias Patient Education Conference

Saturday, June 26, 2010 • 8:30 am to 3:15 pm

REGISTRATION IS FREE

For more Information
www.mdanderson.org/departments/ccg
or to Register call 713-745-7391
email ccg@mdanderson.org

The Clinical Cancer Genetics program offers hereditary cancer risk assessment, genetic counseling and genetic testing based on your needs and your medical and family history.

Agenda Items Include:

- Overview of MEN: Historical Perspective
- Update on Genetic Testing
- Prenatal Diagnosis and Preimplantation Genetic Diagnosis Options
- MEN: Pediatric Perspective
- Practical Issues in Living with a Chronic Condition
- Patient and Provider Panel

Breakout Sessions:

- Pancreatic Tumor Surgery, Treatment, and Clinical Trials
- Long-term Screening and Management of MEN1
- Update on MTC Prevention and Genotype Phenotype Correlations
- Advanced Medullary Thyroid Carcinoma and Targeted Therapies
- Pheochromocytoma Management: What's New?

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