

CLINICAL THYROIDOLOGY FOR PATIENTS



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The dose of Levothyroxine (L-T₄) needed to treat hypothyroidism is affected by a variety of factors, including absorption from the intestines. Taking L-T₄ with medications (for example calcium and iron), food and certain beverages (for example coffee) can affect its' absorption. The aim of this study was to determine how timing of L-T₄ administration affects its' absorption as determined by changes in the blood levels of TSH.

Bach-Huynh TG et al. Timing of levothyroxine administration affects serum thyrotropin concentration. *J Clin Endocrinol Metab* 2009; July 7, jc.2009-0860 [pii];10.1210/jc.2009-0860 [doi]..... 3

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During pregnancy, the placenta produces large amounts of a hormone, human chorionic gonadotropin (hCG). This hormone is closely related to TSH and can weakly bind to the TSH receptors present on the thyroid gland. When the concentrations of hCG are very high, as can be seen in the first trimester of pregnancy, it may actually turn on the thyroid gland. In some individuals, this may cause signs and symptoms of hyperthyroidism. This study was designed to examine the relationship between high hCG levels in the blood, changes in thyroid hormone levels and the clinical features of hyperthyroidism.

Lockwood CM et al. Serum human chorionic gonadotropin concentrations greater than 400,000 IU/L are invariably associated with suppressed serum thyrotropin concentrations. *Thyroid* 2009;19:863-8. . . . 5

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After surgery for thyroid cancer, many patients are also treated with radioactive iodine (I-131) to destroy any remaining thyroid tissue, including any remaining cancer tissue. A scan after I-131 therapy gives a picture of the whole

body and identifies the thyroid tissue remaining in the neck as well as any cancer that has spread outside of the neck. The aim of this study was to determine when is the best time to perform this post-treatment scan.

Hung BT et al. Appropriate time for post-therapeutic I-131 whole body scan. *Clin Nucl Med* 2009;34:339-42 7

THYROID CANCER Higher Serum TSH Levels Correlate With A Higher Incidence Of Thyroid Cancer And Spread of Cancer Outside The Neck In Older Patients

Thyroid nodules are very common; fortunately the likelihood that any one nodule is a thyroid cancer is low. Recent studies have suggested that the risk a nodule is a thyroid cancer is three-times more likely in patients with a TSH >5 than in patients with a TSH <0.06. The aim of this study was to determine the relationship between thyroid cancer, TSH levels, age and advanced cancer stage at the time of diagnosis.

Haymart MR, et al. Higher serum TSH in thyroid cancer patients occurs independent of age and correlates with extrathyroidal extension. *Clin Endocrinol (Oxf)* 2009;71:434-9 9

THYROID CANCER Surgery For Thyroid Cancer Increases The Survival Rate And Enhances The Quality Of Life Of Elderly Patients Providing They Are Well Enough To Tolerate Surgery

Thyroid cancer is often more aggressive in older patients who frequently have other chronic diseases as well, which makes thyroid surgery more difficult. As a result, they may have more surgical complications and may not be able to tolerate radioiodine or radiation therapy which is sometimes needed after surgery. This study sought to compare the characteristics of thyroid cancer presenting in elderly and younger patients and examine outcomes for elderly patients with thyroid cancer.

Matsuyama H et al. Indications for thyroid cancer surgery in elderly patients *Surg Today* 2009;39:652-657. 10

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CLINICAL THYROIDOLOGY FOR PATIENTS

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EDITOR'S COMMENTS

Welcome to *Clinical Thyroidology for Patients*. This publication is a collection of summaries of recently published articles from the medical literature that covers 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. 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*.

Starting with this issue, we will be running a periodic article featuring one of the Alliance Groups. This month, we are highlighting ThyCa: Thyroid Cancer Survivors Association as they report on the success of their recent annual meeting.

In this issue, studies ask the following questions:

- Does when you take your thyroid hormone make a difference?
- How does pregnancy affect your thyroid hormone levels?
- When is the best time to perform the scan after I-131 treatment for thyroid cancer?
- Do thyroid hormone levels predict thyroid cancer in patients with thyroid nodules?
- Is surgery for thyroid cancer beneficial to older patients with multiple other medical conditions?

We welcome your feedback and suggestions. Please follow this [link](#) to let us know what you want to see in this publication. I hope you find these summaries interesting and informative.

—Alan P. Farwell, MD

HOW TO NAVIGATE THIS DOCUMENT: The Table of Contents and the Bookmarks are linked to the articles. To navigate, move your cursor over the article title you wish to see (either in the Contents or in the Bookmarks panel) and the hand will show a pointing finger, indicating a link. Left-click the title and the article will instantly appear on your screen. To return to the Contents, move the cursor to the bottom of the page and left-click **Back to Table of Contents** which appears on every page. If you would like more information about using Bookmarks please see the help feature on the menu bar of Acrobat Reader.



THYROID HORMONE

Thyroid Stimulating Hormone (TSH) Levels Are Altered By The Timing Of Levothyroxine Administration

WHAT IS THE STUDY ABOUT?

Hypothyroidism is treated by Levothyroxine (L-T₄), which is the main hormone secreted by the thyroid gland. The dose of L-T₄ needed to treat hypothyroidism is affected by a variety of factors, including absorption from the intestines. Several medications interfere with the absorption of L-T₄, including calcium and iron. Taking L-T₄ with food and certain beverages, such as coffee, can also affect its' absorption. This has led to the traditional recommendation to patients has been to take L-T₄ on an empty stomach first thing in the morning before breakfast and to wait at least an hour before eating. The aim of this study was to determine how timing of L-T₄ administration affects its' absorption as determined by changes in the blood levels of TSH.

THE FULL ARTICLE TITLE:

Bach-Huynh TG et al. Timing of levothyroxine administration affects serum thyrotropin concentration. *J Clin Endocrinol Metab* 2009; July 7, jc.2009-0860 [pii];10.1210/jc.2009-0860 [doi]

WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine how timing of L-T₄ administration affects its' absorption as determined by changes in the blood levels of TSH.

WHO WAS STUDIED?

The study subjects included 65 patients 18 to 75 years of age who had hypothyroidism for at least 2 years. The patients with hypothyroidism were required to have a stable TSH for >6 months while taking one of the two most popular brands of L-T₄.

HOW WAS THE STUDY DONE?

Thyroid hormone levels were determined at the entry of the study then patients completed three 8-week regimens related to the timing of L-T₄ administration: 1) take L-T₄ after an overnight fast at least 1 hour before breakfast; 2) take L-T₄ with breakfast; 3) take L-T₄ at bedtime, as long as that time was at least 2 hours after their last meal of the day. Thyroid hormone levels were repeated upon completion of each of the three regimens. The patients were asked to keep a diary on the time that they took the medication.

WHAT WERE THE RESULTS OF THE STUDY?

At the time of the baseline TSH determination, 88% of patients were taking their L-T₄ in the fasting state, 9% were taking L-T₄ at bedtime, and 3% were taking it at least an hour before breakfast. The TSH levels in the group that took L-T₄ before breakfast were the most stable within individuals. 55% of those who took L-T₄ with breakfast had TSH variations >1 while 35% of those taking L-T₄ at bedtime had TSH variations >1. While the average TSH in all the groups was in the normal range, the TSH was the lowest when the group took L-T₄ before breakfast and the highest when the group took L-T₄ with breakfast. This suggests that the absorption of Levothyroxine was different during these two periods.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

There have not been many large studies on this topic. One small study showed that taking L-T₄ at bedtime was associated with lower TSH levels than taking it in the morning. This is the opposite of what was found in this study.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Taking L-T₄ with breakfast or at bedtime is associated with a greater variability of absorption as shown by greater variability of TSH values. The most stable absorption of L-T₄ is seen in patients taking L-T₄ in a fasting state before breakfast. Hypothyroid patients should be encouraged to take their L-T₄ first thing in the morning if possible.

— Heather Hofflich, MD

ATA THYROID BROCHURE LINKS

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

Thyroid Hormone Treatment: http://thyroid.org/patients/patient_brochures/hormonetreatment.html

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THYROID HORMONE, 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.

Levothyroxine (L-T₄) — the major hormone produced by the thyroid gland and available in pill form as Levoxyl™, Synthroid™, Levotheroid™ and generic preparations.

Thyroxine (T₄) — 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.

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 FUNCTION IN PREGNANCY

High Serum HCG Concentrations Cause TSH Suppression But Do Not Lead To Symptoms Of Hyperthyroidism

WHAT IS THE STUDY ABOUT?

During pregnancy, the placenta produces large amounts of a hormone, human chorionic gonadotropin (hCG), which is also the hormone that is measured in the standard pregnancy test. This hormone is closely related to TSH and can weakly bind to the TSH receptors present on the thyroid gland. When the concentrations of hCG are very high (ie >200,000), as can be seen in the first trimester of pregnancy, it may actually turn on the thyroid gland and cause it to make extra thyroid hormone (thyroxine [T₄] and triiodothyronine [T₃]) which, in turn, may turn off the production of TSH from the pituitary. In some individuals, this may cause signs and symptoms of hyperthyroidism. This study was designed to examine the relationship between high hCG levels in the blood, changes in thyroid hormone levels and the clinical features of hyperthyroidism.

THE FULL ARTICLE TITLE:

Lockwood CM et al. Serum human chorionic gonadotropin concentrations greater than 400,000 IU/L are invariably associated with suppressed serum thyrotropin concentrations. *Thyroid* 2009;19:863-8.

WHAT WAS THE AIM OF THE STUDY?

This study had three aims: (1) to see what concentration of hCG resulted in consistent suppression of TSH levels; (2) to see how the thyroid hormone levels change with changes in the hCG concentration; and (3) to study the clinical symptoms of patients with hCG levels above 200,000.

WHO WAS STUDIED?

63 women who contributed 69 blood samples that had hCG levels above 200,000 IU/L selected from a total of 15,597 hCG tests run at Barnes-Jewish Hospital in St. Louis and the University of North Carolina Hospitals in Chapel Hill, NC.

HOW WAS THE STUDY DONE?

The medical records of the 63 women were reviewed and the stored blood samples were analyzed for TSH and free thyroxine content.

WHAT WERE THE RESULTS OF THE STUDY?

Hyperemesis gravidarum, a condition of severe vomiting

often associated with high hCG levels, was found in 37% of the women. The remaining women had a variety of reasons for the high hCG levels. None of the patients had a prior diagnosis of hyperthyroidism. The TSH levels were suppressed below normal in all 10 women with hCG concentrations >400,000, and 8 of the 10 had elevated free thyroxine levels. In the entire group of blood samples, 22 (32%) had both low TSH and elevated free thyroxine concentrations. However, clinical signs and symptoms of hyperthyroidism were noted in only 4 of 63 subjects (6%), 2 of whom had hCG concentrations >400,000. Thus, most patients with hCG concentrations above 200,000 do not have symptoms of hyperthyroidism, including those whose TSH levels are suppressed and free thyroxine levels are elevated.

HOW DOES THIS STUDY COMPARE WITH OTHER STUDIES?

This study is consistent with numerous other studies have shown that pregnant patients with hyperemesis gravidarum or other causes of high levels of hCG may have a suppressed TSH with or without an elevation of free thyroxine, and yet may lack the clinical signs or symptoms of hyperthyroidism. This may be due to: 1) a short duration of the hyperthyroidism; 2) the fact that some of the symptoms of pregnancy, especially abnormal pregnancy, may mask the symptoms of hyperthyroidism; 3) differences in an individual's sensitivity to elevations of their thyroid hormones; and 4) physicians not considering that some of the patient's clinical symptoms may be due to hyperthyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

High levels of hCG may be associated with a suppressed TSH with or without an elevation of free thyroxine during pregnancy, especially those associated with hyperemesis gravidarum. However, the majority of the patients with biochemical hyperthyroidism are not recognized to have clinical hyperthyroidism. Although the reasons for the difference between the biochemical and clinical findings are not clear, it is important for doctors to be aware of this condition.

— Glen Braunstein, MD
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THYROID FUNCTION IN PREGNANCY, continued

ATA THYROID BROCHURE LINKS:

Hyperthyroidism: http://thyroid.org/patients/patient_brochures/hyperthyroidism.html

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

ABBREVIATIONS & DEFINITIONS

hCG — human chorionic gonadotropin—the major hormone produced by the placenta which is closely related to thyroid stimulating hormone (TSH). hCG can bind to the TSH receptors present in thyroid tissue and act like a weak form of TSH to cause the thyroid to produce and release more thyroxine and triiodothyronine. hCG is the hormone measured in the pregnancy tests.

Hyperemesis gravidarum — a condition during pregnancy in which the woman has severe nausea and continued vomiting that can lead to weight loss, electrolyte imbalance and dehydration. This usually occurs in the first trimester of pregnancy.

Thyroxine (T₄) — 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.

Triiodothyronine (T₃) — the active thyroid hormone, usually produced from thyroxine.

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.

Hyperthyroidism — a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.



THYROID CANCER

The Best Time For A Posttreatment Whole-Body Scan Is 3 To 6 Days After Therapeutic Radioiodine Is Administered For The Treatment Of Thyroid Cancer

WHAT IS THE STUDY ABOUT?

Once a diagnosis of thyroid cancer is made, the usual next step is surgery to remove the entire thyroid along with the cancer. After surgery, it is important to determine the amount of thyroid tissue left in the neck and whether the cancer has spread outside of the neck. Given persistent swelling in the neck immediately after surgery that distorts the neck architecture, thyroid ultrasounds are not very useful until several months later. The level of thyroglobulin is also not helpful until several months later as well. However, many patients are also treated after surgery with radioactive iodine (I-131) to destroy any remaining thyroid tissue, including any remaining cancer tissue. A scan after I-131 therapy gives a picture of the whole body and identifies the thyroid tissue remaining in the neck as well as any cancer that has spread outside of the neck. The aim of this study was to determine when is the best time to perform this post-treatment scan.

THE FULL ARTICLE TITLE:

Hung BT et al. Appropriate time for post-therapeutic I-131 whole body scan. Clin Nucl Med 2009;34:339-42.

WHAT WAS THE AIM OF THE STUDY?

The aim of the study was to determine the best time to perform a whole body scan after I-131 therapy.

WHO WAS STUDIED?

The study included 239 patients with thyroid cancer treated from January 2006 and May 2008 in the Department of Nuclear Medicine in Chang Gung Memorial Hospital, University College of Medicine in Kaohsiung, Taiwan.

HOW WAS THE STUDY DONE?

All patients had a total thyroidectomy and were treated with I-131 after stopping thyroid hormone therapy for at least 4 weeks (thyroid hormone withdrawal). The patients then had three whole body scans on the 3rd to 4th day, the 5th to 6th day, and the 10th to 11th day after I-131 was administered. The scans were graded as follows: grade 0 = no visible uptake, grade 1 = visible uptake and grade 2 = clearly visible uptake.

WHAT WERE THE RESULTS OF THE STUDY?

The authors found that the ability of the post-treatment scan to accurately detect the amount of thyroid tissue remaining in the body is affected by the timing of the scan. As such, detection of thyroid tissue remaining in the neck was best if the scan was performed within 3 to 6 days after the I-131 therapy as compared to 10-11 days later. The identification of the spread of thyroid cancer outside of the neck was best when the scan was performed by day 9 after the I-131 therapy. Scans performed later than 9 days missed 17-29% of the cancers that had spread outside of the neck.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

This is the first study that looked at the timing of the post-I-131 treatment scan. In current practice, some patients are treated with I-131 after recombinant TSH stimulation rather than thyroid hormone withdrawal. A previous study showed that a post-I-131 therapy scan after recombinant TSH stimulation performed at 48 hours showed a similar finding as a post-I-131 scan after thyroid hormone withdrawal performed 3-6 days after I-131.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that the best time to perform the post-treatment scan after I-131 therapy for thyroid cancer in patients undergoing thyroid hormone withdrawal is 3-6 days after the I-131 dose. This should become the usual time for this scan in the future.

— Mona Sabra, MD

ATA THYROID BROCHURE LINKS

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

Radioactive Iodine Therapy: http://thyroid.org/patients/patient_brochures/radioactive.html

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THYROID CANCER, continued

ABBREVIATIONS & 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.

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 Withdrawal (THW) — this is used to produce high levels of TSH in patients by stopping thyroid hormone pills and causing short-term hypothyroidism. This is mainly used in thyroid cancer patients before treating with radioactive iodine or performing a whole body scan.

Recombinant human TSH (rhTSH) — human TSH that is produced in the laboratory and used to produce high levels of TSH in patients after an intramuscular injection. This is mainly used in thyroid cancer patients before treating with radioactive iodine or performing a whole body scan. The brand name for rhTSH is Thyrogen™.



THYROID CANCER

Higher Serum TSH Levels Correlate With A Higher Incidence Of Thyroid Cancer And Spread of Cancer Outside The Neck In Older Patients

WHAT IS THE STUDY ABOUT?

Thyroid nodules are very common, occurring in up to 50% of adults in the United States. The likelihood that any one nodule is a thyroid cancer is between 5-8%. Recent studies have suggested that the risk a nodule is a thyroid cancer is three-times more likely in patients with an elevated TSH >5 than in patients with a suppressed TSH <0.06. Further, a higher TSH has been associated with a more advanced stage of cancer at the time of diagnosis. Other studies have suggested that the risk of a more advanced stage of cancer is increased in patients >45 years of age. The aim of this study was to determine the relationship between thyroid cancer, TSH levels, age and advanced cancer stage at the time of diagnosis.

THE FULL ARTICLE TITLE:

Haymart MR, et al. Higher serum TSH in thyroid cancer patients occurs independent of age and correlates with extrathyroidal extension. *Clin Endocrinol (Oxf)* 2009;71:434-9

WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine the relationship between thyroid cancer, TSH levels, age and advanced cancer stage at the time of diagnosis.

WHO WAS STUDIED?

The study group was made up of 954 patients who had thyroid surgery at the University of Wisconsin, Madison, from May 1994 through December 2007.

HOW WAS THE STUDY DONE?

The records of 954 patients were reviewed as to the patient's age, the level of the TSH before surgery, the result of the surgery and, in those with thyroid cancer, how extensive the cancer was at the time of surgery.

WHAT WERE THE RESULTS OF THE STUDY?

At all ages, the TSH levels in patients found to have thyroid cancer were higher than in those found to have benign thyroid nodules. This was most apparent in patients between the ages of 45-60 where the average TSH in those with cancer was 3.6 as compared to an average TSH of 2 in

those without cancer. Although the average TSH was higher in patients found to have thyroid cancer, it remained in the normal range in all age groups. In patients >45 years of age, those with higher TSH levels were more likely to have cancer spread outside of the thyroid than those with lower TSH levels. Finally, the increase in cancer risk in patients >45 year of age appeared to be more related to the fact that the average TSH in patient >45 was higher than in those <45 years of age than to the age of the patient.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Previous work by the same authors has shown that higher TSH levels in patients with thyroid nodules are associated with a greater risk of thyroid cancer and advanced tumor stage at the time of diagnosis. The current study is an extension of this earlier study and demonstrates that higher TSH levels are more closely associated with thyroid cancer than the age of the patient, which is different than what has traditionally been thought.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

There is now good evidence that higher serum TSH levels correlate with a higher incidence of thyroid cancer and a higher risk of more advanced cancer at diagnosis. These observations suggest that increased TSH levels are responsible for the increase in thyroid cancer in thyroid nodules, regardless of patient age.

— Frank Cranz, MD

ATA THYROID BROCHURE LINKS

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

ABBREVIATIONS & DEFINITIONS

Thyroid nodule — an abnormal growth of thyroid cells that forms a lump within the thyroid. While most thyroid nodules are non-cancerous (Benign), ~5% are cancerous.

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 CANCER

Surgery For Thyroid Cancer Increases The Survival Rate And Enhances The Quality Of Life Of Elderly Patients Providing They Are Well Enough To Tolerate Surgery

WHAT IS THE STUDY ABOUT?

Thyroid cancer is usually a slow growing cancer and patients usually do well with surgery and, when indicated, radioactive iodine therapy. However, thyroid cancer is often more aggressive in older patients who frequently have other chronic diseases as well, which makes thyroid surgery more difficult. As a result, they may have more surgical complications and may not be able to tolerate radioiodine or radiation therapy which is sometimes needed after surgery. This study sought to compare the characteristics of thyroid cancer presenting in elderly and younger patients and examine outcomes for elderly patients with thyroid cancer.

THE FULL ARTICLE TITLE:

Matsuyama H et al. Indications for thyroid cancer surgery in elderly patients *Surg Today* 2009;39:652-657.

WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to compare the characteristics of thyroid cancer presenting in elderly and younger patients and examine outcomes for elderly patients with thyroid cancer.

WHO WAS STUDIED?

Patients treated for thyroid cancer from 1994 through 2004 at the Cancer Institute Hospital (CIH) in Japan. Of 685 patients treated during this period, a group of 42 “elderly” patients (older than 75 years) who had either initial surgery or reoperation for recurrent cancer or non-surgical treatment and 37 “young” patients (ages between 16 and 29 years) were evaluated in this study.

HOW WAS THE STUDY DONE?

The medical records of the two groups of patients in the study were reviewed as to the clinical characteristics of the diagnosis and treatment of thyroid cancer. Patients were classified as high or low risk according to the authors’ papillary thyroid cancer risk-group classification. The study also looked at the quality of life in patients whose tumors had come back in the neck and in those who had more invasive cancer.

WHAT WERE THE RESULTS OF THE STUDY?

A total of 42 patients comprised the elderly group, with an average age of 78 years. A total of 37 patients comprised the young group, with an average age of 25 years. Papillary thyroid cancer was the most common cancer in both the elderly (76%) and the young (92%) groups. Anaplastic cancer, the most aggressive form of thyroid cancer, was only seen in the elderly group (17%). Over 50% of the elderly group had invasive cancers that required more extensive surgery and longer hospitalizations while only 5% of the young group had such cancers. The cancers tended to come back more often in the elderly group (17% versus 3% in the young group). Of 30 elderly patients with recurrent cancers, 13 needed extensive surgery to remove the cancer and some nearby tissues that had been invaded by tumor such as nerves, esophagus, neck muscles, or part of the trachea. Nine of these patients (69%) eventually died of their cancer.

A total of 13 patients in the elderly group did not have surgery for a variety of reasons, including: 1) they had serious medical problems or poor health that made surgery too risky, 2) they refused surgery or 3) the cancers were too small to cause them any physical problems in the foreseeable future. Three of these patients (23%) died of their cancer. All patients who had surgery were still living 2 years after their diagnosis (100% survival) whereas only 80% of those not treated with surgery were alive 2 years after their diagnosis. The quality of life worsened in 8 of the 12 patients (67%) who were not treated with surgery and in 2 of 32 (6%) who had surgery.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies have also shown that older patients tend have more advanced cancers and that these cancers behave more aggressively and have a worse prognosis than in younger patients. Other studies also have shown that many elderly patients have other medical conditions (hypertension, heart disease, lung problems) which can contribute to poor outcomes with thyroid cancer. This study also shows that surgery does improve survival in elderly patients.

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THYROID CANCER, continued

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Surgery for thyroid cancer improves the survival and the quality of life of elderly patients and should not be avoided if they are well enough to tolerate the operation.

— Regina Castro, MD

ATA THYROID BROCHURE LINKS

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

Thyroid Surgery: http://thyroid.org/patients/patient_brochures/surgery.html

ABBREVIATIONS & DEFINITIONS

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

Anaplastic thyroid cancer — a very rare but very aggressive type of thyroid cancer. In contrast to all other types of thyroid cancer, most patients with anaplastic thyroid cancer die of their cancer and do so within a few years.

Total thyroidectomy — Surgery to remove the entire thyroid gland.

Cancer recurrence — this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point. In thyroid cancer, most recurrences are in the neck region.



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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.





HIGHLIGHT — ThyCa: Thyroid Cancer Survivors Association

12th International Thyroid Cancer Survivors' Conference

More than 450 thyroid cancer survivors, family members, friends, and health care professionals took part in the 12th International Thyroid Cancer Survivors' Conference in Boston, Massachusetts, on October 16–18, 2009. The annual 3-day conference was sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc.

Attendees came from 36 states, District of Columbia, Puerto Rico, Brazil, 5 provinces of Canada, and the United Kingdom. They included people from children through seniors, from people awaiting diagnosis to long-term survivors of every type of thyroid cancer: papillary, follicular, medullary, anaplastic, and variants.

Highlights of the conference's 100-plus sessions included more than 40 physician presentations and Ask-a-Doctor sessions covering treatment, initial and long-term follow-up, as well as recent advances in targeted therapies and clinical trials testing new treatments. The more than 25 physician specialists included several past presidents and current board members of the American Thyroid Association. They came from leading cancer and medical centers around the country, including Boston University School of Medicine, Cleveland Clinic Foundation, Harvard Medical School, Massachusetts Eye and Ear Infirmary, Massachusetts General Hospital, Mayo Clinic, Memorial Sloan-Kettering Cancer Center, The Ohio State University College of Medicine, University of Texas M.D. Anderson Cancer Center, Washington Hospital Center and many other centers.

“We are grateful to the dedicated thyroid cancer specialist physicians who so generously gave of their time in support of patient education,” said Gary Bloom, ThyCa Executive Director and a 14-year survivor of thyroid cancer. “Thyroid cancer requires lifelong management, and this conference is designed to help patients manage their care and quality of life over the long term.”

More than 30 additional speakers included nurses, mental health professionals, specialists in complementary

approaches to well-being, survivors of each type of thyroid cancer and caregivers. “It was truly an empowering experience to meet all other people who are touched by thyroid cancer one way or another, as a patient, a medical professional or a caregiver,” wrote one thyroid cancer survivor, adding, “Also, it was just amazing to see

how a disease like cancer could bring out so much positive energy from people.” Another participant wrote, “I just wanted to thank you for an enlightening and informative Thyroid Cancer Survivors' Conference!” Another wrote, “That was a fantastic conference. So much info.”

On the weekend's Saturday evening, the 8th Annual Dinner/Auction Research Fundraiser raised more than \$35,000 for thyroid cancer research. Thyroid cancer survivor Ken Pelt of Wisconsin gave an inspiring appeal for more thyroid cancer research. ThyCa also announced that it will award new grants for thyroid cancer research in 2010, for the 8th consecutive year. Grant recipients will be selected by an independent expert panel of the American Thyroid Association and the grants are open to researchers and institutions worldwide.

For 2010, ThyCa has scheduled educational and supportive events every month. More than 60 communities have monthly ThyCa Support Group meetings in the United States, Canada, Costa Rica and Philippines; each group has its own web page on www.thyca.org. In addition, during spring 2010, ThyCa will sponsor free one-day educational workshops in locations around the United States, and in Canada. Thyroid Cancer Awareness Month, sponsored by ThyCa, takes place during September, together with year-round awareness campaigns for early detection and treatment of all thyroid cancer.

The 13th International Thyroid Cancer Survivors' Conference will take place in Dallas, Texas, on October 15–17, 2010. Details are available at www.thyca.org.

— Gary Bloom

“Thyroid cancer requires lifelong management, and this conference is designed to help patients manage their care and quality of life over the long term.”

— Gary Bloom



ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS

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

DATE	EVENT	PLACE	ORGANIZATION
Spring 2010	Light of Life Educational Symposium www.checkyourneck.com	New York City	Light of Life
October 15–17, 2010	The 13th International Thyroid Cancer Survivors' Conference www.thyca.org	Dallas, Texas	ThyCa