

Clinical THYROIDOLOGY FOR PATIENTS



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Radetti G et al. Clin Endocrinol (Oxf). October 10, 2011. [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04251.x.

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Moon et al. Thyroid 2011;21(11):1249-1253.

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What is the risk of cancer in suspicious thyroid biopsies

While fine needle aspiration biopsy of thyroid nodules is very accurate, 10-15% of biopsies are reported as indeterminate or suspicious. In these cases, surgery is required to determine if the nodule is cancerous or benign. In this study, the authors examined the clinical features of the nodules that were biopsied with suspicious results.

Castro MR et al Thyroid 2011;21:1191-8. Epub October 18, 2011.

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Improving needle biopsy accuracy with molecular testing

Fine needle aspiration biopsy is the best test to determine whether a thyroid nodule is cancerous. However, in 10-15% of cases, the results are described as "indeterminate" by the pathologist. This usually results in surgery being performed to obtain a definite diagnosis. These two studies look at whether genetic tests done on the biopsy samples can improve the diagnosis of indeterminate samples.

Nikiforov YE et al. J Clin Endocrinol Metab 2011;96:3390-7. Epub August 31 2011.

Vriens MR et al. Cancer. October 17, 2011. [Epub ahead of print]. doi:10.1002/cncr.26587.

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Thyroid cancer is a common cancer that appears to be increasing in incidence. While guidelines suggest a total thyroidectomy as the initial surgery, some studies suggest that a lobectomy may be sufficient. The goal of this study was to compare thyroid cancer survival and recurrence rates in patients with thyroid cancer who were either treated with thyroid lobectomy or total thyroidectomy.

Nixon, IJ et al. Surgery. 2011. October 14, 2011 [Epub ahead of print].

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Determining the ideal dose of radioactive iodine in the treatment of thyroid cancer

Many thyroid cancer patients are treated with radioactive iodine (I-131), particularly those with more advanced cancer. Dosimetry is a way of calculating the maximum dose of I-131 that can be given, while trying to minimize the effects on organs such as the bone marrow. It is very time consuming and only done at specialized centers. The current study compared the effectiveness of dosimetry to empiric doses of I-131 in patients with advanced thyroid cancer.

Klubo-Gwiedzinska J, et al. J Clin Endocrinol Metab 2011;96:3217-25. Epub August 17, 2011.

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The thyroglobulin doubling time predicts survival in patients with papillary thyroid cancer

While most patients with papillary thyroid cancer do well and have an excellent prognosis, some have a more aggressive form of cancer. Serum thyroglobulin levels are used as a sensitive cancer marker to follow-up in patients with thyroid cancer after initial surgery and radioactive iodine therapy. The aim of this study was to test whether the change of serum thyroglobulin during follow-up can predict cancer outcome in patients with papillary thyroid cancer.

Miyauchi A et al. Thyroid 2011;21:707-16. Epub June 7, 2011.

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Clinical Thyroidology for Patients

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CLINICAL THYROIDOLOGY **FOR PATIENTS**

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EDITOR'S COMMENTS

Welcome to **Clinical Thyroidology for Patients**, bringing to you, the patients, the most up-to-date, cutting edge thyroid research. What you read here as research studies will likely become the accepted practice in the future. *Clinical Thyroidology for Patients* is published on a monthly basis and includes summaries of research studies that were discussed in a recent issue of *Clinical Thyroidology*, a publication of the American Thyroid Association for physicians. This means that you, the patients, are 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 around the country by members of the **Alliance for Thyroid Patient Education**. The **Alliance** member groups consist of: the *American Thyroid Association*, the *Graves' Disease and Thyroid Foundation*, the *Light of Life Foundation* and *ThyCa: Thyroid Cancer Survivors Association*.

This month we have our **Spotlight On: the Graves' Disease and Thyroid Foundation** (page 16). This *Alliance* organization had their annual meeting in Boston in November.

In this issue, the studies ask the following questions:

- Should children with subclinical hypothyroidism be treated?
- Can ultrasound imaging diagnose thyroid cancer?
- What is the risk of cancer in suspicious thyroid biopsies?
- Can molecular testing improve the accuracy of thyroid biopsies?
- What surgery is best for thyroid cancer- total thyroidectomy vs lobectomy?
- What is the ideal dose of radioactive iodine to treat thyroid cancer?
- Can you predict survival in patients with thyroid cancer by blood tests?

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

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. To return to the Contents, move the cursor to the bottom of the page and left-click **Back to Table of Contents**.



HYPOTHYROIDISM

Only a few children with subclinical hypothyroidism progress to overt disease within 3 years

BACKGROUND

Overt hypothyroidism is characterized by lab tests that show an elevated TSH and low thyroid hormone levels. The most common cause of hypothyroidism in the US is Hashimoto's thyroiditis, where patients develop thyroid antibodies that attack and destroy the thyroid. Hypothyroidism is treated by replacing thyroid hormone with Levothyroxine. Subclinical hypothyroidism is a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH – the other thyroid hormone levels are normal. In adults, there is controversy as to whether subclinical hypothyroidism should be treated and, if so, at what level of increased TSH should treatment be started. Part of the concern is that TSH levels may return to the normal range with some patients with subclinical hypothyroidism, so treatment would not be indicated. On the other hand, some patients will progress to overt hypothyroidism with marked symptoms if not treated. Most physicians agree that a TSH level >10 mU/L should be treated with Levothyroxine. There is little data in children with subclinical hypothyroidism as to who should be treated and if the recommendations should be any different than in the adult population. This study was performed to determine how many children with subclinical hypothyroidism progress to overt hypothyroidism over a 3 year period.

THE FULL ARTICLE TITLE:

Radetti G et al. The natural history of the normal/mild elevated TSH serum levels in children and adolescents with Hashimoto's thyroiditis and isolated hyperthyrotropinaemia: a three year follow-up. Clin Endocrinol (Oxf). October 10, 2011. [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04251.x.

SUMMARY OF THE STUDY

A total of 382 children were studied in Italy over a period of three years. The mean age of the children was 10.5 years. Individuals were separated into two groups: those with an elevated TSH and negative thyroid antibodies and those with positive thyroid antibodies. Among the patients with positive thyroid antibodies, 236 had normal serum TSH and 86 (27%) had an increased TSH. A total of 39% who initially had an increased TSH increase had their serum TSH return to the normal range, while 39% remained stable and another 14% progressed to overt hypothyroidism. Of those patients with an increased TSH and negative antibodies, 21% progressed to overt hypothyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is an important study because it shows that most children with subclinical hypothyroidism will not go on to develop overt hypothyroidism over a 3 year period. Further, many (39% in this study) will have their TSH levels return to normal. At this point, there is no way to determine which individual will progress to overt hypothyroidism and which will resolve their thyroid abnormalities. Thus, these children need to be followed closely before making the decision to treat.

— Heather Hofflich, DO

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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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. It is caused by antibodies that attack the thyroid and destroy the gland.

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 or not.

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 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 in the United States.



THYROID NODULES

A taller-than-wide thyroid nodule shape on ultrasound imaging is associated with increased risk of thyroid cancer

BACKGROUND

Thyroid nodules are the most common endocrine problem, occurring in up to half of patients that have any type of imaging study that includes the neck. The concern about a thyroid nodule is the possibility that the nodule could contain thyroid cancer. The most recent American Thyroid Association guidelines recommend using thyroid ultrasound to assess the risk of thyroid cancer. The size of the nodule on ultrasound is a major determinant of which nodules should be biopsied. Other features on ultrasound also raise suspicion of cancer. For example, prior studies have shown that nodules with a greater height than width (taller-than-wide) on ultrasound imaging are more likely to be cancerous than round nodules shaped like a ball. This study evaluated the association between a taller-than-wide ultrasound finding and the presence of thyroid cancer.

THE FULL ARTICLE TITLE:

Moon et al. A taller-than-wide shape in thyroid nodules in transverse and longitudinal ultrasonographic planes and the prediction of malignancy. *Thyroid* 2011;21(11):1249-1253.

SUMMARY OF THE STUDY

Ultrasound images from 471 thyroid nodules from 435 patients were studied. There were 370 women and 65 men

and their average age was 50.4 years. The final diagnosis was determined from evaluation of 145 surgically removed and of cells from fine needle aspiration biopsy in 339 patients. A taller-than-wide shape of the nodule was found in 44-68% of nodules ultimately found to be cancerous depending on which ultrasound view was examined. In contrast, a taller-than-wide shape was found 5.5-17.9% of non-cancerous nodules.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that an ultrasound finding of taller-than-wide in a nodule increases the possibility that the nodule is cancerous and should prompt further evaluation with fine needle aspiration biopsy. Since ultrasound imaging is rapidly becoming the standard for evaluation of thyroid nodules, the presence of concerning features such as taller-than-wide helps the physician determining the urgency for performing a biopsy.

— Ruth Belin, MD

ATA THYROID BROCHURE LINKS

Thyroid nodules: http://thyroid.org/patients/patient_brochures/nodules.html

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.

Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses sound waves to create a picture of the structure of the thyroid gland and accurately identify and

characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

Thyroid fine needle aspiration biopsy (FNAB): a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.



THYROID CANCER

What is the risk of cancer in suspicious thyroid biopsies

BACKGROUND

Thyroid nodules are very common and the concern is whether or not a nodule is a thyroid cancer. Many nodules, especially those larger than 1- 1.5 cm are evaluated by fine-needle aspiration biopsy. This procedure is very accurate in diagnosing nodules that are noncancerous (benign) and those that are definitely cancer. However, 10-15% of biopsies are reported as indeterminate or suspicious. In these cases, surgery is required to determine if the nodule is cancerous or benign. In this study, the authors examined the clinical features of the nodules that were biopsied with suspicious results.

THE FULL ARTICLE TITLE:

Castro MR et al Predictors of malignancy in patients with cytologically suspicious thyroid nodules. *Thyroid* 2011;21:1191-8. Epub October 18, 2011.

SUMMARY OF THE STUDY

A total of 573 (8%) of 7039 thyroid biopsy samples obtained from January 2004 to September 2008 were reported as suspicious. Of these, 462 patients underwent thyroid surgery. Of this patient group, the average age was 53 years, 69% were female and 65% had multiple nodules with an average size of 2.8 cm. A summary of the biopsy results showed that 326 (70.6 %) had lesions suspicious

for follicular or hurthle-cell lesions, 126 (27.3%) were suspicious for papillary thyroid cancer and 10 (2.1%) were suspicious for other cancers. The cancer rate was 15% for nodules that were suspicious for follicular and hurthle-cell lesions and 77% for those suspicious for papillary cancer. Multiple nodules, as compared with a single nodule, had a higher risk of cancer (41.1% vs. 26.4%). In patients with cytology suspicious for follicular and Hürthle-cell neoplasm, cancer risk was higher in those who were on thyroid hormone therapy than those not on therapy (37.7% vs. 16.5%).

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirms that biopsies that are suspicious for follicular or hurthle cell lesions are relatively low (15%) while the risk for cancer in those that are suspicious for papillary cancer is relatively high (77%). The main new finding is that suspicious biopsies are more likely to indicate a cancer if the patient has multiple thyroid nodules as compared to a single nodule.

— Alan P. Farwell, 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.

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Thyroid fine needle aspiration biopsy (FNAB): a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to with-draw cells from the thyroid nodule. Patients usually return home or

to work after the biopsy without any ill effects.

Suspicious thyroid biopsy: this happens when there are atypical cytological features suggestive of, but not diagnostic for malignancy. Surgical removal of the nodule is required for a definitive diagnosis. Some centers include the indeterminate biopsies within the suspicious category.

Indeterminate thyroid biopsy: this happens usually when the diagnosis is a follicular or hurthle cell lesion. Follicular and hurthle cells are normal cells found in the thyroid. Current analysis of thyroid biopsy results cannot differentiate between follicular or hurthle cell cancer from noncancerous adenomas. This occurs in 15-20% of biopsies and often results in the need for surgery to remove the nodule.

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



THYROID NODULES

Improving needle biopsy accuracy with molecular testing

BACKGROUND

Thyroid nodules are very common and can be found in up to 50% of individuals that get any type of neck imaging. The concern with a thyroid nodule is whether or not it is cancerous. Fine needle aspiration biopsy (FNAB) is the best test to determine whether a thyroid nodule is cancerous outside of removing the nodule by surgery. FNAB is very accurate and comes up with a definitive diagnosis in over 80% of cases. However, in 10-15% of cases, the FNAB is described as “indeterminate” by the pathologist, meaning that they are unable to determine whether the nodule is cancerous or not by looking at the sample obtained with a microscope. This usually results in surgery being performed to obtain a definite diagnosis. Several genetic abnormalities have been identified that indicate that thyroid cancer is present in a nodule. Recently, researchers have been looking at additional methods, including genetic testing of needle biopsy specimens, to try to more accurately determine which patients have thyroid cancer.

THE FULL ARTICLE TITLES:

Nikiforov YE et al. Impact of mutational testing on the diagnosis and management of patients with cytologically indeterminate thyroid nodules: a prospective analysis of 1056 FNA samples. *J Clin Endocrinol Metab* 2011;96:3390-7. Epub August 31 2011.

Vriens MR et al. MicroRNA expression profiling is a potential diagnostic tool for thyroid cancer. *Cancer*. October 17, 2011. [Epub ahead of print]. doi:10.1002/cncr.26587.

SUMMARY OF THE STUDIES

The authors of the first study (Nikiforov, et al.) looked at 1056 indeterminate FNAB samples from 762 patients over a two year period. These samples were categorized as follicular lesion of undetermined significance (FLUS), follicular neoplasm (FN), or suspicious for malignant cells (SMC). Genetic testing was performed to determine if abnormalities suggestive of thyroid cancer were present in the needle biopsy samples. Of these patients, 479 underwent surgery (representing 513 FNAB samples). Pathologic analysis of the thyroid tissue removed at

surgery was compared to the findings of standard FNAB findings and genetic analysis. For the three categories, FLUS, FN and SMC, the cancer risk by needle biopsy alone was 14%, 27% and 52%. When the genetic testing was positive, the cancer risk increased to 88%, 87% and 95%.

In the second study (Vriens, et al.), the authors also looked at indeterminate FNAB samples to determine if they contain extra amounts of genetic proteins called microRNAs. These microRNAs have been found in thyroid cancers and control the production of other proteins within cells. The authors looked for the amount of 10 different miRNAs in 125 known cases with indeterminate FNAB results. For the miRNA which was most accurate, the authors only could predict thyroid cancers in 75% of cases.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

While FNAB is very helpful in determining which patients need surgery and which can be safely observed, patients with indeterminate findings on FNAB frequently have surgery in order to make a definite diagnosis. The development of molecular genetic tests will help patients and physicians more accurately determine the chance of a nodule being cancerous or not. If the nodule is cancerous, then the appropriate surgery can be planned in advance. If the nodule is not likely to be cancerous, patients can feel more comfortable avoiding surgery and being observed for clinical changes. While the availability of this new technology is exciting and will most likely continue to improve, the costs associated with it still need to be considered.

— Ronald Koppersmith, 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

Thyroid Nodules: http://thyroid.org/patients/patient_brochures/nodules.html

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THYROID NODULES, continued

ABBREVIATIONS & DEFINITIONS

Thyroid fine needle aspiration biopsy (FNAB): a simple procedure that is done in the doctor's office to determine if a thyroid nodule is benign (non-cancerous) or cancer. The doctor uses a very thin needle to withdraw cells from the thyroid nodule. Patients usually return home or to work after the biopsy without any ill effects.

Indeterminate thyroid biopsy: this happens usually

when the diagnosis is a follicular or hurthle cell lesion. Follicular and hurthle cells are normal cells found in the thyroid. Current analysis of thyroid biopsy results cannot differentiate between follicular or hurthle cell cancer from noncancerous adenomas. This occurs in 15-20% of biopsies and often results in the need for surgery to remove the nodule.

microRNAs: small pieces of genetic proteins that have been found in thyroid cancers and control the production of other proteins within cells.



THYROID CANCER

Total thyroidectomy vs. lobectomy for initial thyroid cancer surgery

BACKGROUND

Thyroid cancer is a common cancer that appears to be increasing in incidence. The initial treatment for thyroid cancer is surgery to remove the cancer. The current American Thyroid Association thyroid cancer guidelines recommend total removal of the thyroid (total thyroidectomy) for treatment of all but the smallest thyroid cancers (less than 1cm). Total thyroidectomy can be associated with an increased risk of surgical complications, although the risk remains very low in the hands of an experienced, high volume thyroid surgeon. Some studies suggest that removal of only the thyroid lobe (thyroid lobectomy) containing the cancer may be adequate treatment instead of removing the whole thyroid gland. The goal of this study was to compare thyroid cancer survival and recurrence rates in patients with thyroid cancer who were either treated with thyroid lobectomy or total thyroidectomy.

THE FULL ARTICLE TITLE:

Nixon, IJ et al. Thyroid lobectomy for treatment of well differentiated intrathyroid malignancy. Surgery. 2011. October 14, 2011 [Epub ahead of print].

SUMMARY OF THE STUDY

This study included 889 patients who underwent thyroid surgery for thyroid cancer at Memorial Sloan Kettering Cancer Center in New York between 1986 and 2005. This study only included patients with thyroid cancers that were less than or equal to 4 cm in size and with no known invasion of lymph nodes or spread outside the neck. A total of 361 patients were treated with lobectomy and 528 were treated with total thyroidectomy. As expected, the survival at 10 years was high in both groups of patients (93% in the lobectomy and 91% in the total thyroidectomy group). There were no significant differences in 10 year survival or

thyroid cancer recurrence between the two groups of patients. Both age greater than 45 and male gender were predictive of a worse overall survival, while the type of surgery had no effect on survival.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors conclude that patients with thyroid cancers less than 4cm and no lymph node invasion may be safely treated for their cancer with thyroid lobe removal alone. This study is important for the future care of patients, since it suggests thyroid lobectomy alone may be adequate treatment that for low risk thyroid cancer patients and that with this treatment the overall survival is high. However, the specific situation of each thyroid cancer patient needs to be evaluated by the treating physician(s) to determine the best treatment course for that individual.

— Whitney Woodmansee, 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

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 or lobectomy.

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



THYROID CANCER

Determining the ideal dose of radioactive iodine in the treatment of thyroid cancer

BACKGROUND

The first step in the treatment of the patient with thyroid cancer is a thyroidectomy to remove the thyroid gland. Following surgery, many patients are treated with radioactive iodine (I-131), particularly those with more advanced cancer. Radioactive iodine is given as a pill and the radiation is concentrated within thyroid cells with the goal of killing any cancerous tissue that may remain as well as any remaining normal thyroid tissue. However, choosing the right dose of I-131 which will maximize its cancer-killing effect yet minimize the risk of side effects can be difficult. Dosimetry is a way of calculating the maximum dose of I-131 that can be given, while trying to minimize the effects on organs such as the bone marrow. While more accurate, dosimetry is not commonly used because it is very time consuming and because there is no evidence to show that it is any better than empirically choosing a dose of radioactive iodine. The current study compared the effectiveness of dosimetry to empiric doses of I-131 in patients with advanced thyroid cancer.

THE FULL ARTICLE TITLE:

Klubo-Gwiedzinska J, et al. Efficacy of dosimetric versus empiric prescribed activity of ¹³¹I for therapy of differentiated thyroid cancer. *J Clin Endocrinol Metab* 2011;96:3217-25. Epub August 17, 2011.

SUMMARY OF THE STUDY

The authors studied 87 patients with advanced thyroid cancer who were treated with radioactive iodine at two Washington, DC area hospitals between 2006-2009. One hospital (43 patients) used dosimetry to determine the dose of I-131, whereas the other hospital (44 patients)

used empiric doses. The doses calculated using the dosimetric approach were larger than those using the empiric method, yet the number of patients experiencing side effects was the same in both groups. A larger number of patients with cancer that had spread into the neck had complete remission of their cancer (5 out of 14 (35.7%)) with the larger doses from the dosimetric method as compared to 1 out of 30 (3.3%) treated with empiric doses. However, patients who had the spread of thyroid cancer outside the neck (metastatic cancer) had the same response to the I-131 regardless of whether the dose was calculated by dosimetry or empirically.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that in patients with advanced thyroid cancer that has spread outside the thyroid but is still limited to the neck, it may be more effective to calculate the dose of I-131 using dosimetry rather than to give empiric doses. There appears to be no difference in response in patients with thyroid cancer that has spread outside the neck (metastatic cancer) with either method. However, these results need to be confirmed in much larger studies, since this was a relatively small study.

— Philip Segal, 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.

Metastatic Thyroid Cancer: Thyroid cancer that has spread to organs and tissues outside of the neck.

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).

Dosimetry: the calculation of a dose of I-131 that will maximize the dose into the remaining cancer while minimizing exposure to other organs and tissues. It is a time consuming procedure that is usually performed in only specialized situations. It is often performed by a professional medical dosimetrist with specialized training in the field and is usually only performed in special centers.

Empiric dosing: this method chooses standard dosing of I-131 based on the treating physician's decision. This is the most common method for choosing a dose of I-131 for treating thyroid cancer.



THYROID CANCER

The thyroglobulin doubling time predicts survival in patients with papillary thyroid cancer

WHAT IS THE STUDY ABOUT?

Papillary cancer is the most common thyroid cancer. While most patients with papillary thyroid cancer do well and have an excellent prognosis, some have a more aggressive form of cancer. Thyroglobulin is a cell protein that is unique to thyroid cells, both normal and cancerous. Serum thyroglobulin levels are used as a sensitive cancer marker to follow-up in patients with thyroid cancer after initial surgery and radioactive iodine therapy. An undetectable thyroglobulin level usually indicates no evidence of thyroid cancer while a detectable thyroglobulin level indicates persistent cancer. If the thyroglobulin level increases, this indicates that the thyroid cancer is growing and/or spreading. The aim of this study was to test whether the change of serum thyroglobulin during follow-up can predict cancer outcome in patients with papillary thyroid cancer.

THE FULL ARTICLE:

Miyauchi A et al. Prognostic impact of serum thyroglobulin doubling-time under thyrotropin suppression in patients with papillary thyroid carcinoma who underwent total thyroidectomy. *Thyroid* 2011;21:707-16. Epub June 7, 2011.

SUMMARY OF THE STUDY:

This study included 426 patients with papillary thyroid cancer with an average follow-up of 88 months after surgery. Approximately 60% of these patients had advanced thyroid cancer. Radioactive iodine was given in 167 patients. Ultrasound of the neck was performed once a year. The doubling time of thyroglobulin (TgDT) was calculated based on the thyroglobulin measurements during the follow-up period.

Thyroglobulin levels were detectable in 137 of the 426 patients during the follow-up period. The TgDT was less than 1 year in 17 patients, 1-3 years in 21 patients and more than 3 years in 30 patients. A total of 69 patients had a fall in their thyroglobulin level during the follow-up period and 201 had thyroglobulin levels that were always undetectable. During the study only 6 patients died because of the thyroid cancer. The TgDT was less than 1 year in 5 of these patients and 1 patient had a TgDT of 1-3 years. Overall the 10 year survival was 50% in patients with a TgDT less than 1 year and 95% in patients with a TgDT of 1-3 years. Patients with a Tg-DT of >3 years and those with decreasing or negative Tg during follow-up had a 10 year survival of 100%.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Other studies have shown that serum thyroglobulin level testing after initial thyroidectomy in patients with papillary thyroid cancer is a sensitive indicator of cancer recurrence. This study demonstrates that, patients with faster rising serum Tg levels are at higher risk for death. This study suggests that TgDT should be used in all patients with papillary thyroid cancer to identify patients at higher risk for cancer recurrence or death.

— Jamshid Farahati, 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

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

continued on next page



THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

Thyroid Ultrasound: a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

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.

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 in patients that do not have thyroglobulin antibodies.

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).

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



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 AND THYROID FOUNDATION

www.gdatf.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.





SPOTLIGHT ON

Graves' Disease and Thyroid Foundation — Boston Conference

The days leading up to the Graves' Disease and Thyroid Foundation's annual Patient & Family Conference — A Bridge to Wellness XVIII — featured some unexpected drama.

Less than a week before the conference, set for November 4th–6th at the Boston Doubletree Guest Suites in Boston, MA, a rare fall nor'easter dumped snow throughout the region, leaving many communities without power.

Attendees, presenters, and staff breathed a collective sigh of relief when the storm passed, the snow melted, the power was restored, and the sun came out! Conference attendees were treated to a stellar line-up of presenters, as well as numerous opportunities to connect with fellow patients and family members.

On Thursday, Nov. 3rd, early arrivals enjoyed an afternoon yoga session from presenter Lori Burgwyn, followed by an evening reception at the hotel.

The conference formally kicked off on Friday, with a presentation from Terry J. Smith, MD of the University of Michigan Kellogg Eye Center on "Demystifying Graves' disease and its Ophthalmopathy." Dr. Smith is also the Foundation's Chief Medical and Scientific Officer. The morning session continued with presentations from two local endocrinologists: Lewis Braverman, MD, from the Boston University School of Medicine and Jeffrey M. Korff, MD, from the Tufts University School of Medicine.

The afternoon session featured Anca M. Avram, M.D., a nuclear medicine specialist from the University of Michigan, Nancy H. Patterson, PhD,

Founder and Chairman Emeritus of the Graves' Disease and Thyroid Foundation, and Dr. Herbert Benson, Founder of the Benson-Henry Institute for Mind Body Medicine and author of "The Relaxation Response". Dr. Benson shared research indicating that regular activation of

the "Relaxation Response" creates genetic changes that help counteract the negative effects of stress. The Friday session concluded with yoga instructor Lori Burgwyn, who inspired attendees to develop a "Peaceful Mind, Anytime."

Saturday's session kicked off with a breakfast presentation from Lawrence C. Wood, M.D., Associate Physician at Massachusetts General Hospital (ret.) and a member of the Foundation's Board of Directors. Dr. Wood discussed the clustering of autoimmune thyroid disease in families and encouraged attendees to share their diagnosis with extended family members.

Dr. Wood was followed by endocrine surgeon Barbra Sue Miller, MD of the University of Michigan, and Scott A. Rivkees, MD, of the University of Florida College of Medicine department of pediatrics.

Lunchtime on Saturday featured the always popular "Q&A With the Docs" session, where attendees were able to submit questions to a panel of experts.

A significant portion of the afternoon session was devoted to Graves' Ophthalmopathy (also referred to as Thyroid Eye Disease), with presentations from three doctors from the University of Michigan Kellogg Eye Center: Alon Kahana, M.D., Ph.D. Raymond S. Douglas, M.D., Ph.D., and César A.





continued, **SPOTLIGHT ON**

Graves' Disease and Thyroid Foundation — Boston Conference

Briceño, MD. During his presentation, Dr. Kahana was surprised with a special award from attendee LaQuilla Harris. Laquilla previously suffered from severe eye complications, including double vision, and said that Dr. Kahana “changed her life.”

The Saturday sessions wrapped up with a special presentation titled “Becoming Greater Than Graves” from volunteer Michaela Cui, who organized a 3,200 bike trek from Anchorage, AK to San Francisco, CA in 2011. In the evening, attendees enjoyed a special reception and banquet, featuring prize drawings and numerous volunteer awards.

The event concluded on Sunday with a final “Breakfast Q&A With the Docs” — and attendees went their separate ways having gained a lot of knowledge and a powerful sense of community. Stay tuned for information on the Foundation’s plans for educational programming in 2012!

— **Kimberly Dorris**

Executive Director

Graves' Disease and Thyroid Foundation



ATA Alliance for Thyroid Patient Education CALENDAR OF EVENTS

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

ATA Conferences www.thyroid.org

Nothing is scheduled at this time. Please visit the website for updates.

Graves' Disease Conferences www.gdatf.org

Nothing is scheduled at this time. Please visit the website for updates.

Light of Life Foundation www.checkyourneck.com

Ongoing — www.checkyourneck.com

Thyroid Cancer Awareness campaign with Cindy Crawford and Brooke Shields

June 12, 2010 — a previous symposium available online at:

<http://www.checkyourneck.com/About-Thyroid-Cancer/Thyroid-Cancer-Symposium-Presentations>

Thyroid Cancer Symposium Presentations: What's New in Thyroid Cancer? A Day for Patients and Their Families

Please visit the Light of Life Foundation website to view the Patient Educational Symposium which took place in NYC in 2010. As part of the Patient Educational Program these online presentations provide valuable information in hopes that patients everywhere can gain further information and support about their disease.

ThyCa Conferences www.thyca.org

Every Month

ThyCa Support Group Meetings around the United States and in Canada, Costa Rica, and Philippines.

Complete list of groups, meetings, and contacts at www.thyca.org/sg/local

April 21, 2012 — 8 AM to 4:15 PM. — Lake Regional Hospital, Osage Beach, Missouri

Free Workshop: 8th Annual Midwest Thyroid Cancer Survivors' Workshop with physician speakers

Details at www.thyca.org/conferences

September 2012 — **Thyroid Cancer Awareness Month**

Worldwide observance sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc., with many partnering organizations. Details at www.thyca.org

October 19–21, 2012 — Chicago, Illinois.

The 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org

October 20, 2012 — Chicago, Illinois

The 10th Annual Dinner/Auction Fundraiser for Thyroid Cancer Research, in conjunction with the 15th International Thyroid Cancer Survivors' Conference

Sponsored by ThyCa: Thyroid Cancer Survivors' Association, Inc. Details at www.thyca.org