



THYROID CANCER

Differences in thyroid cancer presentation and outcomes in adolescent and young adults as compared with older adults

WHAT IS THE STUDY ABOUT?

Thyroid cancer is relatively rare in young adults, but there are still a substantial number of adolescents who are diagnosed with papillary thyroid cancer. A cancer registry of cases nationwide, the Surveillance, Epidemiology and End Results (SEER), recently reported that thyroid cancer is the 4th most commonly diagnosed malignancy in individuals 15 to 29 years of age in the US, accounting for 10% of malignancies in that group. Some studies have suggested that young adults often have more extensive disease as compared to adults and are more likely to present with lymph-node involvement and spread of the cancer outside of the neck. Such patients still have an excellent prognosis, with 5 year survival rates exceeding 99 % and usually have a long life expectancy that is minimally affected by the thyroid cancer. This study examined thyroid cancer in adolescents/young adults as compared to older adults in order to determine any differences in these two age groups in the growth pattern and metastatic behavior of papillary thyroid cancer. They also screened cancer specimens in these groups for the presence of cancer-associated genes.

THE FULL ARTICLE TITLE:

Vriens MR et al Clinical and molecular features of papillary thyroid cancer in adolescents and young adults. *Cancer* 2010. 10.1002/cncr.25369 [doi].

WHAT WAS THE AIM OF THE STUDY?

This aim of the study was to determine any differences between thyroid cancer in adolescents/young adults as compared to older adults.

WHO WAS STUDIED?

The study group was obtained after a screening of records of 1011 patients treated at the University of California, San Francisco for thyroid cancer between January 1983 and December 2003. Patients were separated into two groups: 1) Young adults included 109 patients diagnosed with papillary thyroid cancer between 15 and 39 years of age and 2) Older adults included 145 patients diagnosed after 40 years of age.

HOW WAS THE STUDY DONE?

The patient's records were examined as to clinical presentations, recurrence rates and outcomes over time. These data were also compared to the SEER outcome data from 1973-2006. Primary cancer samples of a subset of patients from both groups were analyzed for variations in certain cancer-associated genes as well as some genes unrelated to cancer.

WHAT WERE THE RESULTS OF THE STUDY?

The Young Adults group included more women. Their cancer was smaller at diagnosis and had a higher incidence of spread of the cancer to the lymph nodes of the neck. They also were less likely to have spread of the cancer outside of the neck and had less cancer recurrence at follow-up. Finally, the Young Adults group had a significantly higher overall survival as compared to the Older Adults group. These results were similar to the outcomes obtained by national SEER database.

While there were no significant differences between the expression of cancer-associated genes between the two groups, several genes showed tendencies toward differences. Further studies are needed to determine any potential role for these genes in thyroid cancer.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Several other studies have shown that children have more advanced thyroid cancer at their initial diagnosis than adults, although no studies have specifically compared older adults to adolescents and young adults.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that young adults with papillary cancer have more extensive disease at presentation but have better outcomes as compared to older patients. Further, several novel genes were identified that warrant further study as to their role in thyroid cancer.

— Mona Sabra, 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 & DEFINITIONS

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

Cancer-associated genes — these are genes that are normally expressed in cells. Cancer cells frequently have mutations in these genes. It is unclear whether mutations in these genes cause the cancer or are just associated with the cancer cells. The cancer-associated

genes important in thyroid cancer are BRAF, RET/PTC and RAS.

SEER — Surveillance, Epidemiology and End Results program, a nation-wide anonymous cancer registry generated by the National Cancer Institute that contains information on 26% of the United States population. Website: <http://seer.cancer.gov/>



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