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Are Hürthle-Cell Thyroid Cancers Really a More Aggressive Form of Thyroid Cancer?

Goffredo P, Roman S, Sosa JA. Hurthle cell carcinoma. Cancer. July 11, 2012 [Epub ahead of print]. doi: 10.1002/cncr.27770.

SUMMARY

Background

Hürthle-cell cancer (HCC) is an uncommon thyroid cancer. The World Health Organization (WHO) considers it a variant of follicular thyroid carcinoma. Because of the small numbers of tumors that present annually, there is very little data about the clinical outcome of patients with this cancer. Whether HCC is more aggressive than other forms of differentiated thyroid cancer has been debated for many years (1,2). The authors queried the Surveillance, Epidemiology, and End Results (SEER) database, which acquires data from 18 registries in the United States. These regions represent about 28% of the U.S. population and were selected to reflect the ethnic and socioeconomic characteristics of the entire country. The objectives of this study were to compare outcomes of patients with HCC with patients with other well-differentiated thyroid cancer (ODTC) and evaluate prognostic factors associated with survival at a population level.

Methods and Results

The SEER database was queried from 1988 to 2009. Patients prior to 1988 did not have complete data on the extent of surgery or use of radioactive iodine. Years of diagnosis were divided into 1988–1997, 1998–2006, and 2007–2009. A total of 3311 patients were identified with HCC and 59,585 patients with ODTC. HCC occurs more often in men (31.1% vs. 23% for ODTC, P<0.001) and older patients (mean age, 57.6 years, vs. 48.9 years for ODTC) than in patients with well-differentiated thyroid cancer (WDTC). SEER staging is defined as local (confined to the thyroid), regional (extends beyond the thyroid or has regional lymph nodes), and distant (metastases to extracervical nodes or organs). Patients with HCC presented at a higher SEER stage (P<0.001) and with larger tumors (36.1 mm vs. 20.2 mm for ODTC; P<0.001) than patients with WDTC. It is not clear why, but patients with HCC had total thyroidectomy less often than patients with WDTC (P = 0.028). Overall and disease-specific survival were lower for HCC as compared with WDTC (P<0.001) and have not improved over the past two decades (P = 0.689). The overall survival rate was 82.1% for patients with HCC and 89.2% for patients with ODTC. Disease-specific mortality occurred in 5.9% of patients with HCC and in 2.7% of patients with ODTC. When adjusted for age >45 years, poor prognosis was strongly associated with not having thyroid surgery and distant metastatic disease (hazard ratio, >3). Improved survival from HCC was associated with lower SEER stage, tumor confined to the thyroid, size <4 cm, and no lymph-node metastases. Administration of postoperative RAI was associated with reduced mortality (hazard ratio, 0.66; P = 0.005).

Conclusions

This population study based on the SEER database confirms that HCC has a more aggressive behavior and lower survival as compared with ODTC. Improved survival was associated with small tumors confined to the thyroid without local or distant metastases and with radioiodine therapy.

ANALYSIS AND COMMENTARY

This population study confirms that HCC is a more aggressive form of thyroid cancer. The information would have been more clinically relevant if the authors had compared HCC with follicular thyroid carcinoma rather than with all differentiated thyroid cancers (follicular and papillary thyroid carcinoma). The critical question is whether HCC is more aggressive

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than follicular thyroid carcinoma when compared by American Joint Committee on Cancer (AJCC) staging. Nevertheless, this population study confirms that HCC should be managed aggressively with the expectation of a worse disease-free survival than ODTC. It has always been a question whether RAI ablation therapy should be given for a tumor that is often not iodine-avid. At face value, this population study suggests that RAI ablation reduces mortality, but I suspect that patients who did not receive RAI also did not have thyroidectomy because of advanced local or distant metastatic spread. Thus, the patients who received RAI had lower-stage tumors and a better survival. This is supported by the authors who found after adjusting for "various" factors that RAI was not associated independently with long-term survival. I support the ATA guideline that suggests that RAI ablation of the thyroid remnant should be performed to improve early detection by revealing rising serum thyroglobulin levels (3).

— Stephanie L. Lee, MD, PhD

References

1. Kushchayeva Y, Duh QY, Kebebew E, Clark OH. Prognostic indications for Hürthle cell cancer. World J Surg 2004;28:1266-70. Epub November 11, 2004.
2. Lopez-Penabad L, Chiu AC, Hoff AO, Schultz P, Gaztambide S, Ordoñez NG, Sherman SI. Prognostic factors in patients with Hürthle cell neoplasms of the thyroid. Cancer 2003;97:1186-94.
3. Cooper DS, Doherty GM, Haugen BR, Kloos RT, Lee SL, Mandel SJ, Mazzaferri EL, McIver B, Pacini F, Schlumberger M, Sherman SI, Steward DL, Tuttle RM. Revised American Thyroid Association management guidelines for patients with thyroid nodules and differentiated thyroid cancer. Thyroid 2009;19:1167-214.