Clinical THYROIDOLOGY
AMERICAN THYROID ASSOCIATION FOUNDED 1923

Can Survival Be Improved in Some Patients With Anaplastic Thyroid Cancer?

Akaishi J, Sugino K, Kitagawa W, Nagahama M, Kameyama K, Shimizu K, Ito K, Ito K.
Prognostic factors and treatment outcomes of 100 cases of anaplastic thyroid carcinoma.
Thyroid 2011;21:1183-9. Epub September 21, 2011.

SUMMARY

Background

Patients with anaplastic thyroid carcinoma (ATC) have a poor prognosis, with a median life expectancy of <6 months (1,2). It is unclear why a few patients survive for somewhat long times. An analysis of the outcome of a relatively large number of 100 patients with anaplastic thyroid cancer at a single center was used to identify prognostic factors and treatment outcomes of these patients.

Methods and Results

This was a retrospective chart review study at a single referral center. Review of medical records between 1993 and 2209 revealed 100 patients with a diagnosis of ATC, based on a combination of clinical findings and a fine-needle aspiration biopsy or an open biopsy. There were 80 women and 20 men, with a median age at diagnosis of 68 years (range, 41 to 90). The initial extent of disease of these patients was 11% stage IVA, 31% stage IVB, and 58% stage IVC. Seventy patients underwent surgical treatment, with 24 undergoing complete resection. Seventy-eight patients received radiotherapy, with 58 receiving a total dose of ≥40 Gy. Twenty-seven patients received chemotherapy, and 15 patients received multimodal therapy (surgery, radiotherapy, and chemotherapy). Survival rates by stage at 1 year were 72.7% (stage IVA), 24.8% (stage IVB,) and 8.2% (stage IVC). Poor prognostic factors determined after multivariate analysis were age ≥70 years, white-cell ≥10,000 mm3, extrathyroidal invasion, and distant metastases. Survival after complete resection was better than after incomplete resection or no resection. In addition, radiation doses ≥40 Gy were associated with longer survival. There was long-term survival in 14 patients. Death was related to anaplastic thyroid cancer in 81 patients (21 with local progression, 55 with distant disease, and 3 with both). There were 3 deaths from other diseases, and 2 deaths from unrelated causes.

Conclusions

The prognosis for anaplastic thyroid cancer is poor. This study suggests that surgical treatment, including debulking neck tumors, improved local control and survival. Postoperative radiotherapy has been recommended to control local disease (3). This study suggests that there is a significantly prolonged survival, but only when associated with radiation doses ≥40 Gy. Chemotherapy was more difficult to assess because the agents used changed from year to year. There was no clear improved survival with any one of the regimens used. There was no survival benefit with the addition of paclitaxel to other chemotherapy. Although the overall outcome of ATC remains poor, treatment of early-stage disease with combination surgery, high-dose radiation and chemotherapy may improve the outcomes of a small number of patients with this diagnosis.

continued on next page

ANALYSIS AND COMMENTARY

The 2009 ATA thyroid nodule and cancer guidelines did not address in detail the recommended treatment(s) for anaplastic thyroid carcinoma. At the time of this writing, there were few studies with large numbers of patients with an improvement in life expectancy. Recently, there have been several studies (2-4) with sufficient numbers of patients to allow for management recommendations. This study, with the data from a 50-year review at the Mayo clinic (1), suggests that surgery alone is ineffective to improve survival. Multimodal therapy with radiotherapy ≥40 Gy or by intensity-modulated radiotherapy (IMRT) improves survival of patients with local disease. A recent study at the Mayo clinic (4) suggests that for local disease (stages IVA and IVB) an aggressive approach combining IMRT with radiosensitizing therapy and adjuvant chemotherapy improves survival. There is an emerging concept that localized disease (with no evidence of gross invasion or distant metastases) should be treated aggressively rather than providing only palliative care for all patients with ATC. Currently, there is no standardized treatment protocol for ATC, but evidence-based guidance is coming soon. Dr. Robert Smallridge, chair of the guideline committee, anticipates that the ATA guideline for the management of anaplastic thyroid carcinoma will be published in 2012.

— Stephanie L. Lee, MD, PhD

References

1. McIver B, Hay ID, Giuffrida DF, Dvorak CE, Grant CS, Thompson GB, van Heerden JA, Goellner JR. Anaplastic thyroid carcinoma: a 50-year experience at a single institution. Surgery 2001;130:1028-34.
2. Vankatesh YS, Ordonez NG, Schultz PN, Hickey RC, Goepfert H, Samaan NA. Anaplastic carcinoma of the thyroid: a clinicopathologic study of 121 cases. Cancer 1990;66:321-30.
3. Haigh PI, Ituarte PH, Wu HS, Treseler PA, Posner MD, Quivey JM, Duh QY, Clark OHN. Completely resected anaplastic thyroid carcinoma combined with adjuvant chemotherapy and irradiation is associated with prolonged survival. Cancer 2001;91:2335-42.
4. Foote RL, Molina JR, Kasperbauer JL, Lloyd RV, McIver B, Morris JC, Grant CS, Thompson GB, Richards ML, Hay ID, Smallridge RC, Bible KC. Enhanced survival in locoregionally confined anaplastic thyroid carcinoma: a single-institution experience using aggressive multimodal therapy. Thyroid 2011;21:25-30. Epub December 16, 2010.