Anaplastic Thyroid Cancer: Large Database, Cautious Interpretations

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Goffredo and colleagues from Duke University Medical Center have continued their interest in National Cancer Database (NCDB) data and reviewed the timeliness of resection and thyroidectomy margins in patients with anaplastic thyroid cancer.¹ Clearly, they have a large series of patients who have undergone surgery. Of the 680 patients in the NCDB between 2003 and 2006, a total of 335 (49 %) underwent surgical intervention. This clearly represents half the patients undergoing surgery (49 %), which is not an usual experience in major centers taking care of anaplastic thyroid carcinoma.^{2,3} In our own experience, we see a very small percentage of patients who undergo surgical intervention for anaplastic thyroid carcinoma. Whether some of these were open biopsies or truly an attempt to remove all gross tumor remains somewhat unclear. It also becomes difficult to interpret the true definition of anaplastic thyroid carcinoma. It is not uncommon in many institutions to use poorly differentiated thyroid cancer to be considered as anaplastic carcinoma, either by clinicians or even by the pathologists, which will clearly confuse the entire issue of management of truly defined anaplastic thyroid carcinoma. All large databases in the country, such as surveillance, epidemiology, and end results (SEER) and the NCDB, are important as they provide us with a lot of details regarding current trends in the management of a particular cancer. Clearly, the NCDB collects a great deal of information about patients with cancer. However, we do need to recognize that most of the information is entered through a hospital system rather than by the surgeon or the treating physician himself.

The demographic variables are quite helpful. However, the bulk of information reported by the authors in this manuscript, such as patient origin, primary payer, income, education level, and type of county, probably has very little impact on this manuscript and the information for which these data were collected.

However, the authors report a median survival of 5 months, and 1-year survival of 20 %, which is a general rule in anaplastic thyroid carcinoma. I was also surprised to see a fair number of patients with stage IVb and IVc operated. We would rarely consider operating on a patient with stage IVb anaplastic thyroid carcinoma.

Unless we re-review the operative procedures and true extent of thyroidectomy, interpretation of the databases and its clinical applications may not be truly scientific. The classical intrathyroidal anaplastic thyroid carcinoma is not very common, which is generally an incidental finding after the surgical procedure where the control rates are better. The authors have clearly described the limitations of this study, including coding errors. I was quite surprised to see that in the surgery group 26 % of patients had lobectomy, while 74 % of patients had total thyroidectomy. With a diagnosis of truly anaplastic thyroid carcinoma, it would be rare that one would consider lobectomy alone unless there were some adverse and extenuating circumstances during surgery. I was also surprised to find that in 37 % of the group of patients who had surgery, no radiation therapy was given, and there was no radiation in almost 40 % of the 345 patients in the ‘no surgery group’. This definitely raises some concern regarding the information entry in NCDB. I would say almost every patient with anaplastic thyroid carcinoma would get radiation in a palliative or curative attempt.^{4,5} In the surgery group, 45 % of patients had their lymph node status described as non-examined, which also raises some concern regarding the data entry. Approximately 6 % of patients received radioactive iodine,

which would be extremely questionable in anaplastic thyroid carcinoma.

The margin status described in patients with lobectomy has practically very little meaning in patients undergoing lobectomy. Table 2 describes only 229 patients with information on margin status, out of 335 patients. The issue of margin is quite intriguing in thyroid cancer. Even in a well-differentiated thyroid carcinoma, it is not uncommon to have a positive margin since tumor more than 2 cm in size is likely to be on the surface of the thyroid gland where the inked margin will come back as a positive margin. Almost universally in anaplastic thyroid carcinoma, the margin, by necessity, would be positive unless one is dealing with truly intrathyroidal anaplastic carcinoma, which, for all practical purposes, is quite rare. Generally, the positivity of margins in anaplastic thyroid carcinoma is a rule rather than an exception. The question about margin status being positive or negative is not as critical as R0 versus R1 resection.

The issue regarding the rapidity and timeliness of the management of anaplastic thyroid carcinoma is quite important in the practical sense. When the diagnosis of anaplastic thyroid carcinoma is made, there is generally a need for urgent references and consultation to make a definitive decision in a timely fashion. At our institution, we would generally have the consultation in a matter of a few days so that appropriate decision making is undertaken in a multidisciplinary fashion with the surgeon, medical oncologist, endocrinologist and radiation oncologist. Generally, these tumors grow quite fast and require expeditious decision making and treatment. Whether this expeditious management would make a major difference in the long-term outcome would be difficult to analyze; however, for all practical purposes, everybody would agree that the treatment of anaplastic thyroid carcinoma should be expeditious.

During the discussion on the recent anaplastic thyroid guidelines there was considerable interest in expediting treatment, which has been well-written in the anaplastic thyroid carcinoma guidelines through the American Thyroid Association.⁶ Similarly, there was considerable interest in the ethics evaluation of patients with anaplastic thyroid carcinoma when it comes to best palliation. A special ethical discussion section was added to the anaplastic thyroid carcinoma guidelines.

The authors have made some conclusions in this manuscript, including the fact that aggressive resections may not be recommended in patients with stage IVb and IVc when morbidity and operative risks outweigh the limited benefits of surgery. I would think the majority of the stage IVb and IVc are technically inoperable surgical procedures and there is very little role in aggressive or non-aggressive surgery, with the exception of making a diagnosis that can be easily made now with a core biopsy.

The authors conclude that cervical residual disease lowers the survival in stage IVa only but does not appear to be associated with shortened survival for those patients with more advanced stage of the disease. This conclusion probably needs to be revisited since we know that, in patients with residual cervical disease, progression of the disease can lead to airway-related issues and quick demise. More extensive resections in stage IVb and IVc are probably unlikely to be undertaken and definitely not of great help to the long-term outcome. Once again, I would like to congratulate the authors for their interest and analysis of the NCDB data; however, the conclusions would be a question of continued debate in the management of anaplastic thyroid carcinoma. We should be very critical and cautious in interpreting large databases.

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