Radioimmunotherapy Extends Thyroid Ca Survival

BY HEIDI SPLETE
Senior Writer

PHOENIX — Radioimmunotherapy has the potential to prolong survival in patients with advanced medullary thyroid carcinoma, based on data from a small but promising study presented at the annual meeting of the American Thyroid Association.

Medullary thyroid carcinoma (MTC) differs from other solid tumors in that it progresses slowly when untreated, so even a slight treatment impact may have a large payoff in terms of months of life gained.

Dr. Stéphane Bardet, head of the nuclear medicine department at the Centre François Baclesse, in Caen, France, presented findings from a study published earlier this year in the April issue of the Journal of Clinical Oncology in which the use of pretargeted anticarcinoembryonic antigen (anti-CEA) radioimmunotherapy (RIT) successfully detected malignant lesions and resulted in a higher dose of radiation to tumor cells (J. Clin. Oncol. 2006;24:1705-11).

Radioactive iodine therapy is often used to destroy remaining thyroid tissue after thyroid cancer surgery. RIT includes an antibody, as well as the iodine, that works to target the cancerous tissue more effectively than iodine alone. "It's important to identify high-risk patients who need to be treated after surgery as early as possible, versus low-risk patients for whom a watch-and-wait strategy is acceptable," he said.

The RIT technique is not new; it has been used to treat leukemia and lymphoma, but it has not been well studied in solid tumors. The patients in the current study underwent RIT after receiving an anti-CEA in the form of a bispecific monoclonal antibody (anti-diethylenetriamine pentaacetic acid indium BsMAb) that was followed 4 days later by iodine-131–labeled bivalent hapten.

In addition to demonstrating the success of RIT, the study identified calcitonin levels as a predictive factor of overall survival to help determine which patients are still at risk after thyroid cancer surgery.

The study compared the survival rates of 29 MTC patients who had radioimmunotherapy between 1996 and 2002 with those of 39 untreated MTC patients.

Patients in both the treated and untreated groups were divided into subgroups by calcitonin doubling time—a measure of serum calcitonin that can be predictive of cancer. Patients with calcitonin doubling times of less than 2 years were classified as high risk and patients with calcitonin doubling times of 2 years and higher were classified as low risk.

It's important to identify high-risk patients as early as possible for treatment after surgery, versus low-risk patients for whom a watch-and-wait strategy is acceptable.

Overall median survival rates were significantly longer in the treated vs. the untreated patients within the subgroup of high-risk patients whose calcitonin doubling times were less than 2 years (110 months for treated patients vs. 61 months for untreated patients). The overall survival rates were not significantly different between treated and untreated patients when high- and low-risk patients were taken as a whole, which supports the predictive value of calcitonin doubling time.

A total of 10 of the 19 high-risk patients and all of the low-risk patients (9) who were treated with radioimmunotherapy had favorable biologic responses, defined as increase in calcitonin doubling time of more than 100% after treatment, compared with pretreatment. Complete outcome data were not available for an additional patient who developed myelodysplastic syndrome.

In addition, patients who had bone marrow disease responded well to RIT, which might be an indicator that the therapy reached the involved bone and bone marrow in these patients. Interestingly, patients with bone marrow disease had a significantly longer overall survival rate at 10 years, compared with patients without bone marrow involvement (83% vs. 14%).

In 34 patients for whom toxicity data were available, RIT was associated with mild liver toxicity (grade 1 or 2) in 5 patients and serious toxicity (grade 4) in 8 patients. The toxicity lasted for an average of 20 days. One patient developed myelodysplastic syndrome, but this patient had received two previous radioactive iodine treatments before enrolling in the current study, Dr. Bardet said. ■