

Thyroid Reports: Insight into Radioiodine Ablation and New Guidelines for Nodule Management

Two important studies reported at the end of 2005 and the beginning of 2006 provide valuable information for nuclear medicine specialists who diagnose and treat patients with thyroid carcinomas.

rhTSH in Euthyroid Patients

In an article e-published ahead of print on December 29 in the *Journal of Clinical Endocrinology and Metabolism*, an international team of researchers reported on a randomized, controlled study of radioiodine ablation of thyroid remnants and recombinant human thyrotropin in patients with differentiated thyroid carcinoma. Led by Furio Pacini, MD, of the University of Pisa (Italy), the study included participant authors and researchers from multiple sites in the United States, France, Canada, and Germany. The aim of the study was to compare the efficacy and safety of recombinant thyroid-stimulating hormone (rhTSH) to prepare euthyroid patients on L-thyroxine therapy for ^{131}I remnant tissue ablation (3.7 GBq) with the efficacy and safety of conventional remnant ablation performed in the hypothyroid state. Among the comparative variables measured were quality of life at separate time points and rate of radiation clearing from blood, thyroid, and whole body.

The authors found that in 100% of patients in both groups, the techniques fulfilled the primary criterion for successful ablation: “no visible uptake in the thyroid bed, or if visible, fractional uptake less than 0.1%” on neck scans performed 8 months after therapy. A secondary criterion for successful ablation (rhTSH-stimulated serum thyroglobulin concentration <2 ng/mL) was achieved by 23 of 24 (96%) euthyroid patients and 18 of 21 (86%) hypothyroid patients. Assessment scales for hypothyroid signs and symptoms and general health indicated that quality of life was significantly better preserved in the euthyroid group than in the hypothyroid group. Of great interest was the finding that patients in the euthyroid group had a statistically significant one-third lower radiation dose to blood compared with those in the hypothyroid group. The authors concluded that, “This study demonstrates comparable remnant ablation rates in patients prepared for ^{131}I remnant ablation with 3.7 GBq by either administering rhTSH or withholding thyroid hormone.” However, the finding that rhTSH-prepared patients maintained a higher quality of life and received less radiation exposure to the blood should be taken into account. These findings, one nuclear medicine expert told Newsline, “have the potential

to change the way that remnant thyroid tissue ablation is currently being performed.”

Revised ATA Management Guidelines

On January 20 the American Thyroid Association (ATA) released updated guidelines for the management of patients with thyroid nodules and thyroid cancer, reflecting a decade of improved strategies for identifying, evaluating, and treating thyroid disorders. The new guidelines were pre-published online and appeared in the February issue of *Thyroid*. The 34-page document was prepared by a task force of experts in nuclear medicine, endocrinology, and surgery from leading academic and research institutions across the United States. It provides recommendations on several currently controversial treatment issues, including the most cost-effective approach for diagnostic evaluation of thyroid nodules, the extent of surgery needed for small thyroid cancers, the appropriate use of thyroxine suppression therapy, the role of recombinant human thyrotropin, and the use of radioactive iodine to ablate remnant tissue after thyroidectomy.

Led by task force chair David S. Cooper, MD, director of the division of endocrinology at Sinai Hospital of Baltimore (Maryland) and professor of medicine at Johns Hopkins University School of Medicine (Baltimore), the authors focused on the importance of timely and accurate diagnostic evaluation of thyroid nodules to rule out thyroid cancer and on therapeutic strategies for differentiated thyroid cancer, which represents approximately 90% of the estimated 26,000 cases of thyroid cancer diagnosed each year in the United States. “I am gratified that the ATA had the foresight to develop evidence-based guidelines that will enable physicians who care for patients with thyroid disease to do so rationally, judiciously, and cost effectively,” said Cooper.

The guidelines also include hands-on information on the follow-up and treatment of thyroid nodules, including the role of medical therapy. They outline the goals of therapy for differentiated thyroid cancer, strategies for staging thyroid tumors, the role of adjunctive external beam radiation and chemotherapy, and long-term management issues. With a comprehensive 300-item reference list, the document also provides an excellent review of current practice and research.

Several other groups that release practice guidelines relative to thyroid carcinoma diagnosis and treatment, (Continued on page 26N)