A Survey of Management of Uncomplicated Graves' Disease Shows that Use of Methimazole Is Increasing and Use of Radioactive Iodine Is Decreasing

Jerome M. Hershman

Burch HB, Burman KD, Cooper DS. A 2011 survey of clinical practice patterns in the management of Graves' disease. J Clin Endocrinol Metab 2012;97:4549-58. Epub October 5, 2012; doi: 10.1210/jc.2012-2802.

SUMMARY

Background

In 2011, the authors performed a survey of the management of Graves' disease by members of various endocrine societies here and abroad. The results were compared with those of a similar survey published in 1990 (1).

Methods

The survey was administered by a Web-based commercial survey management service. The target groups were members of the American Thyroid Association (ATA), The Endocrine Society (TES), and the American Association of Clinical Endocrinologists (AACE). The index case was the same as the patient used in the 1990 survey (1): A 42-year-old woman presents with moderate symptoms of hyperthyroidism of 2 months' duration. She is otherwise healthy, takes no medications, has two children, and does not plan on becoming pregnant again. This is her first episode of hyperthyroidism. She has a diffuse goiter, approximately two to three times normal size, a pulse rate of 105, and a normal eye examination. Thyroid hormone levels are found to be twice the upper limit of normal with an undetectable TSH level. The questions focused on management with regard to both diagnosis and therapy. A variation of the case included a patient with concurrent ophthalmopathy; another variation was a 22-year-old woman with hyperthyroidism who planned to become pregnant in 6 to 12 months.

Results

There were 730 respondents, including 162 members of ATA, 648 of TES, and 333 of AACE, many having

dual membership in the societies. Sixty-one percent of the respondents were from North America. Ninety-two percent ran adult endocrinology practices. With regard to additional diagnostic tests, 58% would measure TSH-receptor antibodies, 47% would measure RAI uptake, and 27% would obtain thyroid ultrasound scans.

A beta-adrenergic blocker was used by 92%. For primary therapy, 54% preferred antithyroid drugs (ATDs), 45% preferred RAI, and only 1% preferred thyroidectomy. In North America, 59% would choose RAI, as compared with 69% in 1990. In Europe, Latin America, and Asia-Oceania, 86%, 74%, and 71%, respectively, opted for ATDs. With regard to the choice of ATDs, 83.5% would use methimazole, 13.8% carbimazole, and only 2.7% propylthiouracil (PTU), whereas in 1990, 73% selected PTU. With regard to the duration of ATD therapy, 19.3% would treat for 24 months, 35.4% for 18 months, 30.2% for 12 months, and 13.9% for less than 1 year.

With regard to pretreatment of patients with ATD before RAI, 49% used this only in selected patients, 13% never did this, and 38% did this routinely.

In the presence of Graves' ophthalmopathy, 63% would use prolonged therapy with ATDs, 18% selected thyroidectomy, 17% selected RAI with prophylactic corticosteroids, and only 2% used RAI alone.

For the primary treatment of the 22-year-old woman with hyperthyroidism who planned to become pregnant in 6 to 12 months, 50% preferred prolonged continued on next page



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ATD therapy, 30% would use RAI, and 20% would use thyroidectomy. Of those recommending ATD, 54% would use PTU and 46% would use methimazole and switch to PTU when pregnancy was confirmed.

Conclusions

During the past two decades, there has been a shift away from RAI and toward ATDs for treatment of patients with uncomplicated Graves' disease.

ANALYSIS AND COMMENTARY • • • •

Although the authors noted that only a small proportion of the members of the various societies participated in the survey, 730 is a substantial number of responses from clinical endocrinologists, and these clinicians probably have a strong interest in the management of Graves' disease. I am one of them.

The changes in practice during the past 20 years are substantial and based on several influential studies noted below. There has been a shift away from RAI and toward ATDs for therapy of uncomplicated Graves' disease, although most U.S. endocrinologists still prefer RAI, which is in contrast to the strong preference for ATDs by their European, Latin American, and Asian colleagues. The dramatic avoidance of PTU is based on the report of Rivkees and Szarfman showing

that PTU, but not methimazole, has been associated with severe hepatic injury in young patients (2). However, methimazole causes congenital defects and PTU does not (3), thus leading to the preferential use of PTU in pregnancy.

The near-uniform avoidance of using RAI in patients with Graves' ophthalmopathy is striking and attributable mainly to the Italian studies showing that RAI worsens ophthalmopathy and that this can be prevented by corticosteroids (4,5).

It is difficult to predict how patients with Graves' disease will be treated 20 years from now, but I hope that we will have some rational therapy that is directed at the autoimmune origin and that makes our entire current armamentarium obsolete.

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