Treatment of Subclinical Thyroid Disease Benefits Heart, Survival

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO— Treatment of asymptomatic thyroid disease is controversial but probably worthwhile, Dr. Hossein Gharib said at Perspectives in Women's Health sponsored by OB.GYN. NEWS.

Thyroid-stimulating hormone (TSH) tests are very sensitive and frequently pick up subclinical thyroid disease. The frequency of referrals for subclinical disease seems to be increasing, said Dr. Gharib, professor of medicine at the Mayo Clinic College of Medicine in Rochester, Minn. "We get a lot of consultations coming our way because of this."

Make sure you have the right diagnosis before you begin treatment.

DR. GHARIB

When free T4 hormone levels are normal, a TSH level below 0.5 mIU/L indicates subclinical hyperthyroidism, and a TSH level greater than 5.0 mIU/L indicates subclinical hypothyroid disease. If both the TSH and free T4 levels are abnormal, the patient has clinical thyroid disease, he said.

Make sure you have the right diagnosis before considering treatment, Dr. Gharib cautioned. A low TSH may be seen in patients who are hospitalized, have pituitary disease, or are being treated with thyroxin or amiodarone. An elevated TSH may be due to thyroid hormone resistance, rare forms of hyperthyroidism, or other causes.

He argued for treatment of subclinical hyperthyroidism because of potential cardiac, bone, and mortality benefits. The Framingham heart study showed that a TSH level below 0.1 mIU/L was associated with a 28% incidence of atrial fibrillation, triple the relative risk for atrial fibrillation seen in people with normal TSH levels during the 10-year study (N. Engl. J. Med. 1994;331:1249-52).

It is well established that accelerated bone loss seen with either clinical or subclinical hyperthyroidism (especially in menopausal women) can be arrested or reversed with treatment of thyroid disease, he added. Another long-term study shows that people with low TSH levels have an increased risk of dying, probably from cardiovascular causes (Lancet 2001;358:861-5).

He argued for treatment of subclinical hypothyroid disease to prevent progression to overt hypothyroidism, reduce symptoms, and reduce risks from increases in total cholesterol or cardiovascular problems that may accompany frank hypothyroidism. Treatment of subclinical hypothyroidism is controversial especially because it is not a life-threatening problem and usually is asymptomatic.

One study found that people with subclinical hypothyroidism who were TSH antibody positive had a 55% chance of progressing to clinical hypothyroid disease over 20 years compared with a 27% cumulative incidence of frank hypothyroidism in people with normal TSH levels who were TSH antibody positive (Clin. Endocrinol. 1995;43:55-68).

"I think that the evidence is compelling enough that we should tell the patient, 'Let's treat today so you won't become clinically hypothyroid,'" he said.

The presence of other factors should influence the decision to treat, he added. A physician may choose not to treat a healthy 35-year-old with subclinical hypothyroidism, but should strongly consider treatment in the presence of thyroid peroxidase antibodies, goiter, elevated total cholesterol, infertility, or symptoms of hyperthyroidism.

Any woman with subclinical hypothyroidism who is pregnant or thinking of becoming pregnant should be treated because even a mildly abnormal TSH level in the early stages of pregnancy can cause adverse pregnancy outcomes, Dr. Gharib said.

He suggested that women older than 30 years should get a TSH test periodically. The American Thyroid Association recommends a TSH test for women at age 35 years, to be repeated every 5 years.

Endocrine Society guidelines advise observing patients if the TSH level is 0.1-0.5 mIU/L, treating most patients with a TSH between 5 mIU/L and 10 mIU/L, and treating all patients with TSH levels that are below 0.1 mIU/L or above 10 mIU/L.

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Mother's Iodine Intake Affects Newborn's TSH

BY HEIDI SPLETE
Senior Writer

PHOENIX — Neonatal thyroid-stimulating hormone data can be used to detect epidemiologic trends in iodine sufficiency in pregnant women, even in countries where iodine intake is usually adequate, based on a study of 54,400 neonates presented at the annual meeting of the American Thyroid Association.

"Readily available neonatal TSH can be used to track the effects of altered trends in maternal iodine nutrition," said Dr. Peter Smyth of the Conway Institute of Biomolecular and Biomedical Research at the University College Dublin.

Steps can be taken to increase iodine intake in pregnant women (which is important for proper fetal cognitive development) if the neonatal TSH in a population suggests low levels of maternal dietary iodine. The fetus depends on maternal thyroid hormones for normal development during the first 13-15 weeks of pregnancy, Dr. Smyth noted.

To assess the potential role of neonatal TSH as an indicator of a mother's iodine status, researchers screened a birth cohort of babies born in Ireland between 1988 and 2006.

Overall, TSH levels in newborns increased slightly but steadily during the study period, although the proportion of infants with severe iodine deficiency (TSH less than 5 mU/L) remained constant and stayed in a range of 2.35%-2.83%.

Notably, data from routine neonatal TSH screening showed a seasonal variation: Infants born in August had consistently higher TSH levels than infants born in January. Most dietary iodine in Ireland comes from milk and dairy products, and dietary iodine intake is disproportionately lower during the summer because the herd animals are out grazing and not receiving any nutritional supplements, Dr. Smyth explained.

Iodine levels in pregnant women were assessed using urinary iodine (UI) excretion values, and the decline in these values during the study period confirmed that the pregnant female population was borderline iodine deficient but relatively stable, although the UI values reflected the seasonal variation in dietary iodine intake.

From 1988 to 2003, the mean maternal UI values ranged from 70 to 83 mcg/L during the summer months and from 82 to 137 mcg/L during the winter months.

But findings from 2004 and 2005 showed a significant drop in maternal UI levels, which fell to a mean of 45 mcg/L in 2004 and 42.5 mcg/L in 2005. That trend has raised concerns about the need for dietary iodine supplementation in pregnant women in Ireland, said Dr. Smyth.

The study results support the link between declining urinary iodine levels in pregnant women and fetal thyroid function, and the trend data for maternal UI can be used to decide whether to initiate thyroid screening programs during pregnancy. ■

Outpatient Thyroidectomy Costs Less and Is Safe, Effective

BY ALICIA AULT
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TORONTO — Thyroidectomy can be safely and effectively done on an outpatient basis and at a lower cost than in the hospital, according to results from a prospective, nonrandomized trial presented at the annual meeting of the American Academy of Otolaryngology–Head and Neck Surgery Foundation.

Dr. David J. Terris of the Medical College of Georgia, Augusta, presented the results of the 91-patient study. He noted that while minimally invasive techniques have made it possible to perform thyroid removal on an outpatient basis, most surgeons have continued to keep patients at least overnight for observation for complications such as laryngeal nerve damage, airway compromise, and hypoparathyroidism.

Dr. Terris and his colleagues at the medical college enrolled consecutive patients who had thyroidectomy from 2004 to 2005. Patients either had conventional surgery using a Kocher incision, minimally invasive surgery, or endoscopic thyroidectomy.

Overall, 42 patients had a hemithyroidectomy, 38 a total thyroidectomy, and 11 a completion thyroidectomy. Of the 91 patients, 76 were women and 15 were men; the mean age was 46 years. The surgery was performed on an outpatient basis in 52 of the cases and as an inpatient procedure in 39. A procedure was considered inpatient if the patient was observed for at least 23 hours. If a patient had significant comorbidities or required a surgical drain (for a large lesion), he or she was offered an inpatient procedure. Patients who requested admission also were placed into the inpatient arm.

Outpatients were discharged as soon as they were ambulatory and could manage the pain. They were told to seek medical help if they had symptoms such as respiratory compromise or hypocalcemia, and were seen for follow-up 1-2 weeks after thyroid removal.

To deter hypocalcemia, every patient was given a prophylactic regimen of oral calcium carbonate for 3 weeks before the surgery. They took 600 mg three times daily for the first week, 600 mg twice daily in the second week, and 600 mg once a day in the third week.

There was no significant difference in age or gender between the inpatients and outpatients. But the operating room time was shorter for outpatients—102 minutes, compared with 144 minutes for inpatients. Mean estimated blood loss was lower in the outpatient group, at 18 mL, compared with 29 mL for the inpatient arm.

Two patients in the hospital group had complications, including hypocalcemia. One outpatient was anxious after being discharged and returned to the hospital where she was admitted. There were no hemorrhages or expanding hematomas.

Surgeons often argue that thyroidectomy must be done on an inpatient basis so drains can be placed postsurgically to prevent hematomas that might block the airway, Dr. Terris said. But new ultrasonic technology that creates an almost bloodless surgical field reduces the risk of expanding hematomas and makes it possible to decrease reliance on surgical drains. That makes outpatient surgery more feasible, as the Georgia study demonstrated, he said.

The study also showed that giving patients calcium before surgery also curbs the risk of hypocalcemia, he added.

Another argument favors outpatient thyroidectomy. The mean charge was lower: $7,800 for outpatient surgery, compared with $10,200 for inpatient surgery. ■