Monthly Check Urged for Hypothyroid Infants

VITALS

Major finding: With use of four criteria to help determine whether to monitor infants with congenital hypothyroidism, monthly monitoring was deemed required in 75% of children in the first 6 months of life and in 35% during the second 6 months.

Source of data: A retrospective chart review of 70 infants seen at a single institution.

Disclosures: Dr. Balhara stated that she had no relevant financial disclosures

BY MIRIAM E. TUCKER

NEW YORK — Monthly monitoring of thyroid status was justified in 75% of 70 infants with congenital hypothyroidism in the first 6 months of life and for 35% of those infants in the next 6 months, in a retrospective chart analysis.

The findings suggest that monthly monitoring should continue for a year in all infants with congenital hypothyroidism, in contrast to current guidelines stating that serum T_4 and TSH measurements should be performed every 1-2 months during the first 6 months of life, followed by 3- to 4-month intervals from 6 to 36 months of age.

The 2006 guidelines, issued jointly by the American Academy of Pediatrics, the American Thyroid Association, and the Lawson Wilkins Pediatric Endocrine Society, also advise a repeat test at 4 weeks after any change in levothyroxine dosage, and "more frequent intervals" when compliance is questioned, abnormal values are obtained, or the dose or source of medication has been changed (Pediatrics 2006;117:2290-303).

"There is a paucity of literature behind the AAP recommendation. We monitor more frequently in the second 6 months of life. Based on our results, we think [infants with congenital hypothyroidism] need monthly monitoring for the entire first year," Dr. Bharti Balhara said in an interview during her poster presentation at a joint meeting of the Lawson Wilkins Pediatric Endocrine Society and the European Society for Pediatric Endocrinology.

The 70 patients were among 98 who were seen at the pediatric endocrine unit of Massachusetts General Hospital for Children, Boston, where Dr. Balhara works. She and her associates developed the following four criteria to indicate the need for monthly monitoring:

- Dose change within a month of previous visit.
- Total/free T_4 levels not in the upper half of normal within a month of previous visit.
- TSH more than twice the upper limit of normal 2 months after a visit (if monitoring was done every other month) associated with total/free T_4 not in the upper half of normal range.
- Any TSH below 0.1 microIU/mL.

Based on those criteria, monthly monitoring was required in 75% of children in the first 6 months of life and in 35% during the second 6 months. Children who required monthly monitoring in the second 6 months of life had higher baseline TSH (326 vs. 192 microIU/mL) and lower baseline total T_4 (5.6 vs. 7.8 mcg/dL), compared with those who did not require it.

Variables found not to predict the need for monthly monitoring included baseline levothyroxine dose, ethnicity, sex, birth weight, or prematurity. Also not significant was thyroid dysgenesis, Dr. Balhara reported. ■

Draft Guidelines for Grave's Treatment Stress Options

BY JOYCE FRIEDEN

New draft hyperthyroidism treatment guidelines from the American Thyroid Association and the American Association of Clinical Endocrinologists emphasize that although radioactive iodine is a good treatment for the disorder, patients need to consult with their physicians about all three available treatment options: radioactive iodine, surgery, and antithyroid medications, according to Dr. Rebecca Bahn.

"Physicians in the United States have long considered radioactive iodine to be the preferred treatment for Grave's disease," Dr. Bahn, chair of the guideline task force, said in an interview. "We're recommending that the patient and the physician have a careful and clear discussion about the three treatment options, and that any of the three options are viable." Dr. Bahn presented the draft guidelines at the annual meeting of the American Thyroid Association in Palm Beach, Fla.

That is not to say that there aren't some situations in which one procedure is preferable, said Dr. Bahn, professor of medicine and a consultant in endocrinology at the Mayo Clinic, Rochester, Minn. "Pregnant women should not receive radioactive iodine, and patients with medical problems that put them at high risk for surgery should not choose surgery. But our overall recommendation is that the patient and the physician should make the decision following a careful discussion."

Another major change in the guidelines deals with antithyroid drug therapy. "It used to be that propylthiouracil (PTU) or methimazole could be used interchangeably, but there's now good evidence that there's a very serious hepatic necrosis associated with PTU; it's rare, but it's not at all associated with methimazole," she said. "So our guidelines will say that if you're going to use antithyroid drugs you should use methimazole except in certain instances. This is especially true of children, who are particularly susceptible to [this liver complication]."

On the other hand, women who have Grave's disease that is diagnosed in the first trimester of pregnancy should be started on PTU, because methimazole is associated with certain birth defects such as cutis aplasia and choanal or esophageal atresia, Dr. Bahn said.

"Also, if the patient is found to have minor side effects with methimazole, in some cases PTU might be used," she continued.

In the case of hyperthyroidism caused by nodules, "for definitive treatment we don't recommend antithyroid drugs because the patient would have to be on those essentially forever," she said.

"In some instances, such as patients with a relatively short life expectancy or iodine-induced disease, these medications may be used, but in general, the treatment is surgery or RAI." In particular, the task force is recommending that for toxic multinodular goiter, near-total or total thyroidectomy should be performed, preferably by a high-volume thyroid surgeon.

Dr. Bahn said that she expected a final draft of the guidelines to be ready to submit to both Thyroid and Endocrine Practice early this year for eventual simultaneous publication.

Dr. Bahn reported having no conflicts to declare with regard to the guidelines. ■

Therapy for Sleep Apnea May Improve Metabolic Measures

BY SHERRY BOSCHERT

SAN FRANCISCO — Sleep apnea can cause metabolic dysfunction, some of which can be reversed by treating the disorder with continuous positive airway pressure, a small 8-week study of 29 patients suggests.

Nine women with polycystic ovarian syndrome (PCOS) and 20 women without PCOS, all of whom had obstructive sleep apnea, were treated with continuous positive airway pressure (CPAP) at home for 8 weeks. Investigators monitored the use of CPAP to ensure good compliance with therapy, and took metabolic measurements at the start and the end of the study.

Measures of sleep quality improved for the cohort as a whole after treatment. This was accompanied by both nighttime and daytime reductions in catecholamine levels, Dr. David A. Ehrmann said at the Sixth Annual World Congress on Insulin Resistance Syndrome.

"This has important implications in terms of both the metabolic and cardiovascular effects of obstructive sleep apnea in this population," said Dr. Ehrmann, professor of medicine at the University of Chicago.

Sophisticated spectral analysis of heart rate variability as a measure of autonomic function showed that lowered catecholamine levels were reflected functionally in a slowing of heart rate, a lower autonomic function, and a lesser degree of epinephrine-induced variability in heart rate after treatment with CPAP, he added.

In lean subjects, greater compliance with CPAP therapy (the more CPAP they got per hours of sleep) was associated with increased insulin sensitivity. Obese subjects showed a lesser improvement in insulin sensitivity—but an improvement nonetheless—that also was associated with greater use of CPAP, Dr. Ehrmann said.

Among the measures of sleep quality that improved significantly with CPAP therapy, slow-wave sleep activity increased from 59 minutes per night to 72 minutes per night for the cohort as a whole. The apnea-hypopnea index score decreased from 24 to 2 per hour of sleep. The oxygen desaturation index score decreased from 12 to 1 per hour of sleep. The arousal index score decreased from 27 to 23 per hour of sleep.

Sleep apnea is recognized as a reversible risk factor for hypertension and for a number of abnormalities associated with insulin resistance syndromes. Women with PCOS are predisposed to develop obstructive sleep apnea at a rate sevenfold higher than women without PCOS, previous studies suggest. Although obesity plays a role, it does not by itself fully account for the higher risk for sleep apnea in women with PCOS.

Nor does androgen excess explain the higher prevalence of sleep apnea with PCOS, Dr. Ehrmann added. In the nine women with PCOS in his study, 24-hour cortisol levels did not change significantly after CPAP treatment compared with baseline.

In a previous study of 53 women with PCOS and 452 controls, the PCOS group was 30 times more likely to have sleep disordered breathing and nine times more likely to have daytime sleepiness after researchers controlled for body mass index. Insulin resistance was a stronger predictor of sleep disordered breathing than was age, BMI, or testosterone levels (J. Clin Endocrinol. Metab. 2001;86:517-20).

Dr. Ehrmann reported having no conflicts of interest related to these topics. ■