Selenium Slows Chronic Thyroiditis in Pregnancy

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VERONA, ITALY — For the first time, selenium supplementation has been shown to lessen the progression of autoimmune chronic thyroiditis in pregnant women.

Pregnant women who are positive for thyroid peroxidase antibodies are prone to develop postpartum thyroid dysfunction and permanent hypothyroidism.

Selenium supplementation during and after pregnancy reduced the incidence of both conditions in a large prospective, randomized controlled trial of euthyroid pregnant women, Dr. Roberto Negro and associates reported in an award-winning poster at a joint meeting of the Italian Association of Clinical Endocrinologists and the American Association of Clinical Endocrinologists.

"Giving adequate selenium supplementation may reduce the inflammatory action of the thyroid gland after delivery," Dr. Negro said in an interview. "This is not sufficient to recommend this treatment for all pregnant women affected by chronic autoimmune thyroiditis, but it may be considered."

Of the 2,143 women who participated in the study, 7.9% were positive for thyroid peroxidase antibodies (TPOAb). Of the TPOAb-positive women who both remained in the study and did not miscarry, Dr. Negro and associates randomized 77 to 200 mcg/day selenomethionine beginning at the 12th week of pregnancy until 12 months after delivery, and 74 to placebo. Of the TPOAb-negative women, 81 were age matched and served as the control. Thyroid function tests were performed at 20 and 30 weeks' gestation, at delivery, and after delivery at months 1, 2, 5, 9, and 12.

Blood selenium concentrations were measured at the first endocrinologic visit (at an average 9.4 weeks' gestation), at 20 and 30 weeks' gestation, at delivery, and at 6 and 12 months after delivery. Thyroid ultrasound scans were performed by an independent radiologist at the first endocrinologic visit during pregnancy, at delivery, and at 12 months after delivery.

At baseline, there were no significant differences between the three groups in average age (28 years, 28 years, and 27 years, respectively), in free thyroxine levels, and in the time supplementation began (average 12 weeks). Significant differences were noted between groups in baseline thyroid-stimulating hormone (1.6 mIU/L, 1.7 mIU/L, and 0.9 mIU/L, respectively) and in those requiring levothyroxine during pregnancy (19.4%, 21.6%, and 2.5%, respectively).

Postpartum thyroid problem rates were lower in women who took selenium supplements.

DR. NEGRO

At 12 months after delivery, rates of postpartum thyroid dysfunction (28.6% vs. 48.6%) and permanent hypothyroidism (11.7% vs. 20.3%) were significantly lower in women taking the selenium supplements than in placebo-treated patients, the authors reported.

In addition, TPOAb titers were significantly lower in the supplement group compared with placebo-treated patients, with a 62.4% versus 43.9% reduction during pregnancy and lower titers during the postpartum period (323.2 kIU/L vs. 621.1 kIU/L).

When the ultrasound echogenicity patterns of the two groups were compared, the selenium-supplemented group displayed a significantly lower percentage of moderate to advanced thyroiditis (grades 2-3) at the end of the postpartum period (27.3% vs. 44.6%), the authors reported.

No side effects were reported in the mothers and no families have been recalled for newborn thyroid dysfunction, said Dr. Negro, of the endocrinology department at Azienda Ospedaliera "Vito Fazzi," Lecce, Italy.

"Relatively high doses are needed to obtain a significant response on postpartum thyroid dysfunction," he said.

Further investigations are required to know whether these beneficial effects are reversed if selenium supplementation is interrupted or whether they can be maintained for a long time if selenium is continued, the authors concluded. ■