Deficits of Gastric Acid Secretion
Impair Absorption of Thyroxine

BY DOUG BRUNK
San Francisco Bureau

Patients with multinodular goiter required a thyroxine dosage increase of 22%-34% if they had impaired secretion of stomach acids, results from a large controlled study demonstrated.

The finding suggests that "normal gastric acid secretion is important for the subsequent intestinal absorption of thyroxine," wrote the researchers, led by Dr. Marco Centanni of the department of experimental medicine and pathology at La Sapienza University, Rome.

"Although the clinical importance of these findings is fairly clear, the mechanism by which intestinal absorption of thyroxine is impaired in patients with hypochlorhydria is unknown. We may only speculate that oral thyroxine is administered as sodium salt that is less lipophilic than the native hormone, which enters target cells through passive diffusion and not active transport, inhibited by hypochlorhydria," they added.

In another study published in the same issue of Diabetes Care, researchers evaluated the thyroid-pituitary axis every 4 months in 135 women and 10 women treated with omeprazole, respectively.

The median thyroxine dose required of the 60 patients with hypothyroidism was 125 µg per day, which was a 22% median increase from that of the referent group. This was statistically significant compared with the 60 patients with atrophic gastritis of the body of the stomach also was 125 mg per day, which was a 27% median increase from that of the referent group. (Those with evidence of H. pylori infection required a median thyroxine dose of 150 µg per day, a median increase of 34% from that of the referent group, while those without such evidence required a median thyroxine dose of 125 µg per day, a median increase of 24% from that of the referent group.) Serum thyrotropin levels rose variably in the cohort of 11 women with newly diagnosed H. pylori infection.

"In some patients, a slightly higher dose of thyroid was needed to restore thyrotropin suppression," the researchers wrote. "Likewise, the increase in the level of serum thyrotropin was variable in patients treated with omeprazole, although the suppressive effect of thyroxine on thyrotropin disappeared in all patients and was restored only at a substantially higher dose of thyroxine."

Biannual Dietary Counseling Improves Pediatric Outcomes

BY SHERRY BOSCHERT
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Giving families of infants and children individualized dietary counseling twice a year reduced the children’s intake of fat and improved their insulin sensitivity by age 9 in a long-term randomized study.

The ongoing Special Turku Coronary Risk Factor Intervention Project for Children, a Finnish study, randomized healthy 7-month-old infants in 1990 to an intervention group (548 infants) or a control group (522 infants). The control group received the basic health education provided at well-baby clinics.

A physician and a dietitian provided individualized dietary counseling to the intervention group. Twice a year, families recorded what the child consumed for 3 days, followed-up on the dietitian reviewed the list and suggested dietary changes. At 9 years of age, families were reassessed.

The children in the intervention group consumed significantly less fat and saturated fat than those in the control group. Scores on the homeostasis model assessment of insulin resistance (HOMA-IR) index at age 9 were lower in the intervention children, indicating better insulin sensitivity compared with controls (Diabetes Care 2006;29:781-5).

Multivariate analyses indicated that “our finding of lower HOMA-IR in intervention children is to a large extent due to their lower saturated fat intake,” Dr. Taisto Kaiaas and associates said. Other factors, such as exercise habits, also may partly explain the intervention’s effect in lowering insulin resistance.

Smoking Not Tied To Hypothyroidism

BY DOUG BRUNK
San Francisco Bureau

Washington — Smoking was associated with an increased risk of subclinical hypothyroidism but no increased risk in clinical disease in unpublished data from the Danish Investigation of Iodine Intake and Thyroid Disease.

Dr. Peter Laurberg, a professor of endocrinology at Aarhus University Hospital, reported on 140 cigarette smokers, 47 were former smokers, and 51 were nonsmokers. Of 539 healthy control subjects, 193 were current smokers, 147 were former smoke- ers, and 219 were nonsmokers. “So there seems to be, in this study, no effect of smoking on development of overt hypothyroidism,” he said.

The study followed a cohort of individuals prior to mandatory iodine supplementation in Denmark in 2000 and involves a prospective registry of hyper- and hypothyroid patients.

In an examination of smoking and subclinical disease, 1,619 smokers had a nonsignificant odds ratio of 1.15 for having subclinical hypothyroidism compared with 2,800 nonsmokers. Alternatively, smokers had an odds ratio of 0.47 for subclinical hypothyroidism.

One proposed mechanism for this observation is that the liver detoxifies the cyanide in smoke to give thiocyanate, which reduces iodine transport into the cell in a manner similar to decreasing iodine intake. The thyroid cells compensate by trying to pump more iodide into the cell. However, the upregulation of these processes produces peroxide. “So if you are deficient over a long period without being severely deficient ... you get a thyroid with irregular growth and function and necrosis,” Dr. Laurberg said.

Smokers also might be protected against autoimmune thyroid disease, as they have lower levels of thyroid autoantibodies than nonsmokers, said Dr. Laurberg.