Subclinical Hypothyroidism Linked to HF in Elderly

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WASHINGTON — Elderly adults with subclinical hypothyroidism and a thyroid-stimulating hormone level at or above 7 mIU/L are at increased risk for heart failure, Nicolas Rodondi, M.D., reported at a conference on cardiovascular disease epidemiology and prevention sponsored by the American Heart Association.

However, adults aged 70-79 with subclinical hypothyroidism with thyroid-stimulating hormone values below 7 mIU/L are not at increased risk for heart failure. Subclinical hypothyroidism does not appear to be associated with other cardiovascular events in that age group, regardless of thyroid-stimulating hormone level, said Dr. Rodondi of the University of California, San Francisco.

Previous studies have shown that subclinical hypothyroidism—in which T_4 is normal but thyroid-stimulating hormone is elevated (4.5 mIU/L or above)—is associated with elevated total cholesterol, LDL cholesterol, and C-reactive protein. But data on cardiovascular outcomes are conflicting, he noted at the conference, also sponsored by the National Heart, Lung, and Blood Institute.

The current study included 2,740 men and women aged 70-79 years who were participating in the Health, Aging, and Body Composition Study, funded by the National Institute on Aging. Subjects with abnormal T_4 levels or thyroid-stimulating hormone levels at or below 0.1 mIU/L had been previously excluded.

The 339 individuals who had subclinical hypothyroidism at baseline were less likely than the 2,401 euthyroid subjects to be black (25.4% vs. 41.8%), but did not differ significantly by age or gender. At baseline, total cholesterol was significantly higher among those with subclinical hypothyroidism (211.5 vs. 204.5 mg/dL). About 30% of both groups had prevalent cardiovascular disease at baseline, while 8.3% of the subclinical hypothyroid and 6.2% of the euthyroid groups had preexisting heart failure.

The cardiovascular events that occurred during the 4 years of follow-up included 336 coronary heart disease cases (including 98 myocardial infarctions), 154 strokes, 83 peripheral arterial disease cases, and 183 instances of congestive heart failure.

Heart failure rates were 16.9 per 1,000 person-years in the euthyroid group versus 21.9 per 1,000 in the subclinical hypothyroid group.

Rates of heart failure were 16.9 per 1,000 person-years in the euthyroid group, compared with 21.9/1,000 person-years in the subclinical hypothyroid group.

Among subjects who had thyroid-stimulating hormone levels of 10 mIU/L or greater, the mean rate of heart failure was 36.9/1,000 person-years, with a hazard ratio of 3.10 after adjustment for demographics, socioeconomic characteristics, thyroid hormone use, cardiovascular risk factors, and prevalent cardiovascular disease.

For those with thyroid-stimulating hormone of 7-9.9 mIU/L, the rate was 37.4/1,000 person-years and the adjusted hazard ratio 2.88.

The heart failure rate among subjects with thyroid-stimulating hormone levels of 4.5-6.9 mIU/L was 14.8/1,000 person-years, not significantly different from the euthyroid group, and none of the subclinical hypothyroid group had significantly elevated rates of coronary heart disease, stroke, peripheral artery disease, or mortality.

Among the 2,558 subjects without heart failure at baseline, the hazard ratio for developing heart failure during the 4-year follow-up among those with thyroid-stimulating hormone at or above 7 mIU/L was 2.49, compared with those who were euthyroid.

Among the 182 who already had heart failure at baseline, the risk for recurrent heart failure was even greater, with a hazard ratio of 7.62.

It remains to be determined whether subclinical hypothyroidism causes or worsens preexisting heart failure. Since the association was stronger for recurrent heart failure events, further investigation that incorporates echocardiography is warranted, Dr. Rodondi told this newspaper. ■