

# Patients treated for hyperthyroidism or hypothyroidism have an increase in frequency of some cardiovascular disorders

**The background of the study.** Patients with either hyperthyroidism or hypothyroidism may have abnormal cardiovascular function. Whether patients with either thyroid disorder who have been treated have an increase in cardiovascular morbidity and mortality and overall (all-causes) mortality is not known. In this study, the frequency of these outcomes was determined in patients treated for hyperthyroidism or hypothyroidism.

**How the study was done.** The study subjects were all patients living in Tayside, Scotland, who had been treated for hyperthyroidism or hypothyroidism between 1994 and 2001. Cases were identified from physician, hospital, laboratory, and medication records; a thyroid registry; and mortality records. The outcomes studied were all-cause and cardiovascular mortality and cardiovascular diseases, including ischemic heart disease (myocardial infarction, angina), heart failure, and cerebrovascular disease. The frequency of these events in the patients was compared with the frequency in the general population.

**The results of the study.** During the study period, 3888 patients were treated for hyperthyroidism and followed for 21,190 patient-years; 772 were newly diagnosed during the study period. For hypothyroidism, there were 15,889 patients followed for 79,345 patient-years; 7904 were newly diagnosed. By 2001, the prevalence of hyperthyroidism was 0.7 percent and that of hypothyroidism 2.9 percent.

There was no increase in all-cause mortality in the treated patients with hyperthyroidism or hypothyroidism. There was an increase in death from cardiovascular diseases in the treated patients with hypothyroidism. Among the newly diagnosed patients, there was an increase in cardiac-rhythm disorders in the treated patients with hyperthyroidism, and small increases in death from cardiovascular disease and in frequency of cardiovascular diseases, including ischemic heart disease, heart failure, cardiac-rhythm disorders, and cerebrovascular disease, in the treated patients with hypothyroidism.

**The conclusions of the study.** All-cause mortality is not increased in patients with hyperthyroidism or hypothyroidism who have been treated. The frequency of cardiac arrhythmias is increased in treated patients with hyperthyroidism, and the frequency of some cardiovascular diseases is increased in treated patients with hypothyroidism.