

HYPERTHYROIDISM
AND RADIOIODINE

Patients with iodine-induced subclinical and clinical hyperthyroidism should be carefully medicated to normalize thyroid function before radioiodine treatment for multinodular goiters, according to a Brazilian research group.

The study by Romão *et al.* was designed to establish the efficacy of recombinant human TSH (rhTSH) as an adjuvant to radioiodine therapy for the treatment of patients with multinodular goiters with or without hyperthyroidism. The investigators enrolled 42 patients with multinodular goiters, of whom six had symptoms of clinical hyperthyroidism, 18 had subclinical hyperthyroidism and 18 had normal thyroid function.

Romão *et al.* first removed iodine from the patients' diet for 90 days before radioiodine therapy. Moreover, the six patients with clinical hyperthyroidism received a daily dose of 10 mg methimazole for 30 days. The treatment protocol comprised a 0.1 mg intramuscular injection of rhTSH, followed by administration of 1.1 GBq of radioiodine—a much lower dose than the doses of radioiodine used in previous studies—after 24 h.

After reduction of thyroid volume with radioiodine, patients with hyperthyroidism had more adverse effects than euthyroid patients, for example, a very high surge of thyroid hormones in the first 2–3 weeks after treatment. “This could be considered as potentially dangerous owing to the well-known cardiac effects of increased circulating levels of thyroid hormones,” comments senior investigator Geraldo Medeiros-Neto (University of São Paulo, Brazil).

The researchers recommend that patients with multinodular goiters and hyperthyroidism be treated with 15 mg methimazole per day for 2 months in combination with a low-iodine diet before radioiodine treatment to avoid the risks of cardiac events.

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Original article Romão, R. *et al.* High prevalence of side effects after recombinant human thyrotropin-stimulated radioiodine treatment with 30 mCi in patients with multinodular goiter and subclinical/clinical hyperthyroidism. *Thyroid* 19, 945–951 (2009)