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Editorials: Radioactive Iodine Treatment of Hyperthyroidism

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registrations are not time consuming, and that the epidemiological data are meaningful to the planning and evaluation of health care at a local level.

In addition to this, the epidemiologic data base has been a valuable tool in health services research. A reduction in the prevalence of dental diseases among children has been observed during the last 10–15 years and nowadays dental caries tends to concentrate to the so-called risk groups. In a following paper (p. 169) the relevance of the recording system in health services research is clearly demonstrated. The progression and the pattern of dental caries among risk groups are described and the possibilities of screening risk children in a Danish municipality are evaluated.

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Radioactive Iodine Treatment of Hyperthyroidism

Radiodine treatment of hyperthyroidism is a simple and economical method of treatment. It produces the ablative effects of surgery without any immediate operative and postoperative complications. The principal disadvantage attendant on the use of radioiodine is the rather high frequency of hypothyroidism. Previously there was concerns that this form of therapy might produce thyroid carcinoma, leukemia or genetic damage, but more than 35 years experience with the treatment does not confirm this suggestion.

There is little doubt that the beneficial effect of radioiodine depends upon radiation-induced destruction of the thyroid parenchyma. Within the first few weeks after treatment there occurs epithelial swelling and necrosis, disruption of follicular architecture, edema and infiltration with leucocytes (radiation thyroiditis). Resolution of the acute inflammation is followed by fibrosis and lymphocytic infiltration. A functional abnormality after treatment is the defective organic binding of thyroid iodine. This is illustrated by the perchlorate discharge test, which often is abnormal.

The main side-effect of radioactive iodine treatment of hyperthyroidism is the high incidence of myxoedema, which occur with an increasing rate of approximately three per cent every year, dependent on the dosis of radioiodine used and type of goitre. In the material published in the paper by Falkenberg et al. in this issue the results of radioactive iodine treatment of 269 patients with hyperthyroidism are given; 29.7% had diffuse toxic goitre, 42% multinodular toxic goitre and 28.3% toxic adenoma. In these three groups 57.5%, 10.7% and 23.9% had myxoedema five years later. The dose was about 330 mBq (10 mC), but varied considerably. The incidence of hypothyroidism was independent of the dose given. Altogether 28.3% developed hypothyroidism in the five-year-period. Only two patients developed recurrence of hyperthyroidism.

In a Danish study from Copenhagen (1) with an observation time of five years two groups of patients were compared; 248 patients received radioactive iodine treatment alone, 132 patients received combination therapy with radioactive iodine and carbimazole. In the first group 18% developed hypothyroidism and in the second group 7%. No patients with toxic adenoma developed hypothyroidism in the two groups. The reason for the significant difference between the two groups may be a lower absorbed radiation dose caused by a carbimazole-induced blockage of recirculation of ^{131}I. The average dose of ^{131}I was about 220 mBq (6 mC) in both groups, but it was necessary to give 50% of the patients more than one dose with two to three months interval. The combination therapy has the major benefit of rendering the patients biochemially euthyroid within three weeks and keeping the patient euthyroid during the whole period of therapy.

Radioactive iodine treatment of hyperthyroidism is specially indicated in cases with toxic solitary adenoma, in patients with multinodular toxic goitre, and in patients with recurrences after medical antithyroid longtime treatment and recurrences after surgery. In these groups of patients longtime medical treatment has a high frequency of relapse.

In many centers thyroid surgery is only recommended in cases with big goitres and in cases with suspicion of malignancy.

REFERENCE

1. Blidahl H, Mölholm Hansen J, Rogowski P, et al. ^{131}I-treatment of diffuse and nodular toxic goitre with or without antithyroid agents. Acta Endocrinol 1982; 99:517–21.

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