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TSH BINDING INHIBITING ANTIBODY (TBIAB), SERUM CONCENTRATION OF THYROGLOBULIN (Tg) and T<sub>3</sub> SUPPRESSION TEST IN TREATED PATIENTS WITH GRAVES' DISEASE.

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The correlation between TBIAb, the concentrations of serum Tg and the results of T<sub>3</sub> suppression test in treated patients with Graves' disease were investigated. In patients with Graves' disease who became euthyroid with the treatment of antithyroid drug, TBIAb was measured and T<sub>3</sub> suppression test was undertaken. The concentrations of serum Tg were measured in the patients who were negative for anti-Tg antibody in serum.

A positive correlation was observed between serum concentration of Tg and TBIAb. The concentrations of serum Tg were increased in all the patients with positive TBIAb.

A positive correlation was observed between the thyroidal uptake of I-123 after the administration of 75µg T<sub>3</sub> daily for 7 days and TBIAb. All the patients with positive TBIAb were unresponsive to T<sub>3</sub>. The concentrations of serum Tg in T<sub>3</sub> unresponsive patients were significantly higher than those in T<sub>3</sub> suppressive patients. It seems that there are relationships between the increase of serum concentration of Tg and TBIAb and between T<sub>3</sub> suppressibility and TBIAb in patients with Graves' disease.

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CLINICAL SIGNIFICANCE OF Tc-99m PERTECHNETATE EARLY UPTAKE RATE IN THYROID SUPPRESSION TEST.

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Eighty two patients with hyperthyroidism on anti-thyroidal agents were studied to determine the usefulness of thyroidal Tc-99m pertechnetate (Tc) early uptake rates in T<sub>3</sub> suppression tests. Following suppression by T<sub>3</sub> for 8 days, each patient was administered Tc of 300 micro Ci intravenously and thyroidal 20 min uptake rate was measured with a scintillation camera and a computer system. Simultaneously, I-131 20 min uptake rate was measured by the same way as Tc. True injected counts were obtained by using a neck phantom. In 92 studies of the 82 patients, Tc uptake rates were shown highly to correlate to I-131 uptake rates (r=0.92). A study on 64 patients revealed a significant relation between required dose of antithyroidal agent and Tc uptake rate. In a study of 46 patients, titres of antimicrosomal antibody were found to depend fairly on Tc uptake rates. These findings indicate that in T<sub>3</sub> suppression test, Tc-99m pertechnetate early uptake rate has a significant potency to select appropriate treatment and estimate prognosis in anti-thyroidal treatment, hence a replacement of I-131 early uptake rate.

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ACUTE CHANGES IN THYROID HORMONES AFTER I-131 TREATMENT IN GRAVES' DISEASE.

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Twentyone hyperthyroid patients were followed with serum thyroid hormone and Tg levels for 10 days after I-131 treatment. One group (3 patients) had increases of hormone levels at Days 1-3. Other group (18 patients) had decreases of hormone levels at Days 3-7. On the other hand, Tg levels increased in most of patients. There was no relation between the dose of I-131, the initial T<sub>4</sub> and changes in serum Tg levels in these groups. And there was no correlation of changes in thyroid hormone levels with rate of decrease in goiter weight 1 year after I-131 treatment. This suggests that I-131 may have some effects on mechanism in release of thyroid hormone.

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THE NEW PLAN OF I-131 TREATMENT FOR GRAVES' DISEASE.

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One thousand and six hundred twenty patients were treated with an averaged I-131 dose of 7500 rad from 1963 to 1967 and we surveied of 208 patients out of 1620 patients 10 years after I-131 treatment. (I-131 high dose therapy) In the same way, 655 patients were treated with an average I-131 dose of 3000 rad from 1975 to 1976 and surveied of 264 patients out of 655 patients 5 or 6 years after I-131 treatment. (I-131 low dose therapy) Compared the result of I-131 high dose therapy with I-131 low dose therapy, we obtained that the result of I-131 treatment was influenced by goiter weight. So, we make the new plan of I-131 treatment for Graves' disease that the dose of this treatment correspond with goiter weight.

| Goiter weight | Dose     |
|---------------|----------|
| ~ 29 g        | 2500 rad |
| 30 ~          | 3000     |
| 40 ~          | 3500     |
| 50 ~          | 4000     |
| 60 ~          | 4500     |
| 70 ~          | 5000     |
| 80 ~          | 6000     |
| 100 ~         | 7000     |
| 120 ~         | 8000     |
| 140 ~         | 9000     |