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CLINICAL EVALUATION OF ANTITHYROGLOBULIN ANTIBODIES BY IMMUNORADIOMETRIC ASSAY. Shinji Morita, Kanji Kuma, Hajime Tamai\*, Noriyuki Osako\*, Osamu Fukino\*, Shigenobu Nagataki\*\* Kuma Hospital, Kobe. \*Department of psychosomatic Medicine, Faculty Medicine, Kyushu University, Fukuoka. \*\*First Department of Medicine, Faculty of Medicine, University of Nagasaki, Nagasaki. Japan

Serum antithyroglobulin antibodies were measured with immunoradiometric assay (IRMA) to investigate correlation between thyroid and microsome tests and IRMA using 116 patients with Graves' disease. (1) Anti-Tg antibodies was detected by IRMA in only one of 48 patients who showed negative reactions to thyroid and microsome tests (T<sub>0</sub>, M<sub>0</sub>). (2) None of 34 patients who were T<sub>0</sub>M<sub>0</sub> had anti-Tg antibodies by IRMA. (3) Anti-Tg antibodies was detected by IRMA in one out of 4 patients whose thyroid and microsome tests were positive (T=200X, M≥200X). (4) Anti-Tg antibodies was detected in all 30 patients whose thyroid and microsome tests were more than 400 folds.

Conclusion: Immunoradiometric assay had no correlation with microsome test and showed high specificity to antithyroglobulin antibodies.

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SERUM THYROGLOBULIN AND THYROID CANCER. Y. Yamashita, M. Izumi, S. Ohtagara, I. Kubo, H. Hirayu, M. Taura, I. Morimoto, and S. Nagataki. First Department of Internal Medicine, Faculty of Medicine, University of Nagasaki. Nagasaki

It is well known that the concentration of serum Thyroglobulin (Tg) is elevated in patients with thyroid carcinoma. The purpose of this study is to evaluate the significance of Tg as a tumor marker after total thyroidectomy alone or 131-I therapy following total thyroidectomy. Twelve patients with well-differentiated thyroid carcinoma were divided into two groups. Group I underwent total thyroidectomy alone and group II total thyroidectomy and 131-I therapy. When all patients of group II were rendered hypothyroidism for 131-I therapy, the Tg levels increased in all of them, however, a hot area on 131-I scintigram was found in only one patient. During thyroid hormone replacement therapy the concentrations of Tg were undetectable in two patients without metastasis in both groups. On the other hand, among patients with metastasis they were detectable in all patients of group I, however, in only one of group II. These results suggest that serum Tg is more sensitive and useful than 131-I scanning to detect residual thyroid tissues and metastasis and that it is the best marker for monitoring patients with operated thyroid carcinoma after 131-I therapy.

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CLINICAL STUDIES ON REGULATION OF TSH SECRETION--Alterations after single oral dose of bromocriptine, triiodothyronine, and prednisolone. T. Mori, T. Ishihara, S. Bito, and K. Ikekubo Department of Intern. Med., and Nuclear Med., Kobe Central Municipal Hospital, Kobe

Effects of single oral 2.5 mg dose of bromocriptine on serum TSH levels of 11 patients with euthyroid state and normal pituitary reserve were studied. For comparisons, effects of triiodothyronine (T3) and prednisolone (PD) were also studied. Blood specimens obtained before and every one hour till 6 hours after drug administration were assayed for TSH (modified sensitive RIA), T3U, T4, T3, and free T4 (Gamma Coat). Serum TSH levels ( $1.61 \pm 0.67$   $\mu$ U/ml at 0 Hr) were progressively and significantly decreased after bromocriptine (1 Hr:  $81.2 \pm 15.4$ , 3 Hrs:  $60.7 \pm 19.7$ , 6 Hrs:  $50.1 \pm 18.0$ , respectively). T3 also showed slight but not significant decrease after bromocriptine. T4, free T4, and T3U did not show significant alterations. After 25  $\mu$ g oral T3 TSH revealed progressive decrease till  $62.5 \pm 3.5$  at 6 Hrs. After 15 to 25 mg oral PD apparent TSH decrease compatible with 2.5 mg bromocriptine was observed ( $57.5 \pm 6.4$  at 3 Hrs). TRH tests were performed in 2 patients under chronic bromocriptine treatment (7.5 and 5.0 mg daily). In contrast to low normal basal TSH (0.51, 0.98), excessive TSH responses (peak: 27.0, 18.8) were observed after TRH. In conclusion, bromocriptine were found to decrease TSH levels of euthyroid subjects significantly, however, chronic treatment by bromocriptine were considered not so effective to reduce TSH reserve.

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CLINICAL APPLICATION OF RADIORECEPTOR ASSAY FOR TSH: CHANGES OF TSH-BINDING INHIBITOR IMMUNOGLOBULINS AND PROGNOSIS OF GRAVES' DISEASE AFTER ANTIHYROID DRUG TREATMENT. Y. Iida, T. Misaki, K. Kasagi, K. Endo, J. Konishi, K. Torizuka Department of Nuclear Medicine, Kyoto University School of Medicine. Kyoto

The changes in the activities of TSH-binding inhibitor immunoglobulins (TBII) and human thyroid stimulator (HTS) were studied during anti-thyroid drug therapy of Graves' disease. TBII were measured by the radioreceptor assay for TSH using 1 mg IgG and HTS was measured by the increase in cyclic AMP in the monolayer culture of human thyroid adenoma cells using 3 mg IgG. Before treatment, TBII were positive in 8 out of 10 patients, while 9 out of 10 were positive in HTS. There were little changes in TBII and HTS activities during initial 2-3 months after anti-thyroid drug treatment. The activity of TBII and HTS decreased during 4-5 months and reached normal level after 5-15 months in 3 and 2 out of 6 patients, respectively. TBII and HTS were positive in 6 and 7 out of 33 patients respectively at the time of T3 suppression test. All of the 4 patients who were positive in either TBII or HTS at the cessation of therapy relapsed. It is concluded that the measurement of TBII and HTS is valuable as a prognostic indicator of Graves' disease.