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A NEW IN VITRO ASSAY FOR TSAB BY MEASURING I-125 UPTAKE IN FRTL-5 THYROID CELLS.
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We have recently developed a new in vitro assay for thyroid stimulating Antibodies (TSAb) in which I-125 uptake in FRTL-5 thyroid cells is measured as an index of stimulation.

FRTL-5 cells which had been cultured for 3 days in Coon's modified Ham's F-12 medium containing crude immunoglobulin fractions sedimented from serum (200 μ l) with 15 % polyethylene glycol were incubated in a modified Hank's solution with 10 mM Hepes, pH 7.3 containing Na I-125 (0.1 μ Ci) and 10 μ M NaI for 60 min, followed by determination of radioactivity in the cells.

The assay was sensitive enough to elicit 2-3 times and 5-6 times increase in I-125 uptake at 0.01 and 0.1 mU/ml TSH, respectively. By using this assay, TSAbs were detected in 18 (81.8 %) out of 22 patients with untreated Graves' disease, 7 (63.6 %) out of 11 hyperthyroid patients with treated Graves' disease, 6 (50.0 %) out of 12 patients with euthyroid Graves' disease and none of 9 patients with Hashimoto's thyroiditis. TSAbs activities assessed by the present assay showed significant correlation with those assessed by stimulation of cAMP production in FRTL-5 cells ($\gamma=0.748$, $n=45$, $p<0.001$), and the ratio of Tc-99m thyroidal uptake to estimated thyroid weight ($\gamma=0.413$, $n=34$, $p<0.02$).

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POSTOPERATIVE ALTERATION OF TBII ACTIVITY IN GRAVES' DISEASE(2nd report)- AN ANALYSIS OF PERIPHERAL BLOOD LYMPHOCYTE SUBSET-.
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At the last congress, we had reported the alteration of TBII activity before and after operation for patients with Graves' disease. And then, TBII activity was measured by Smith's kit, and showing more than 15% was designated as "positive". But it is still questionable whether the value of TBII activity itself has an equivalent biological effect of activating thyroid function or not. However, these positive values are clinically significant when the postoperative decline of TBII activity turn to increase. Because this case has a high possibility of relapse. While, no relation was found between the decline speed of TBII activity and the weight of residual thyroid which might be a regulator of postoperative decline. Now other regulator is little known except an immunological factor. Thus an analysis of peripheral blood lymphocyte subset (OK series) and interfollicular lymphoid infiltration has been studied. As control for postoperative change in OK series, patients with abdominal surgery were studied. And they showed a recovery distribution after a week. While patients with Graves' disease showed a low distribution of OK-Ial in the pre- and postoperative course. Among of them, TBII positive patients showed a little difference in OK series and in lymphoid cell infiltration.