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**Clinical Evaluation of a Radioiodine Test Kit for TSH-Receptor Antibody**

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Clinical usefulness of a TSH-receptor assay kit (B.R. Smith) was studied. Lubrol-solubilized porcine TSH-receptors used in the kit had anKa of 4.7 × 10^10 M^-1 in the assay buffer. Sensitivity was 30 pg/ml in the presence of 50 µl of serum (i.e. 180 pg/ml of serum). When immunoglobulin concentrations were used as samples, relative 125I-TSH binding was 100 ± 1.6% (mean ± S.D.) in 21 normal controls, while 22 out of 26 untreated patients with Graves' disease (85%) showed 125I-TSH binding less than 92% of controls. Intra- and inter-assay C.V.s in the assay of TSH-binding inhibitory immunoglobulins was determined. Potnet TBI was detected in 3 cases with pretilial myxedema and in 2 patients with primary myxedema. Results obtained in 31 Graves' patients showed a good correlation with those obtained by our assay using Triton-solubilized human receptors (r=0.68). When serum was used as sample, serum levels of TSH-binding inhibitory immunoglobulins were positively correlated with those of TSH binding (r=0.38). TBI detected by using 17 sera correlated well with those using immunoglobulins (r=0.94). However, in the case of serum sample, non-specific precipitation of TSH binding was elevated with the increasing globulin concentration, requiring an appropriate correction for the non-specific precipitation in cases with hyperglobulinemia.

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**The Assay of TSH Receptor Antibody Using TSH Receptor Assay Kit**

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Clinical studies using TSH receptor assay kit made by Dr. Smith (England) was performed. The determined value was accurate and reproducible by direct assay of serum (50 µl). Human TSH (50 µU) had no effect on the binding of 125I-TSH to the receptor. bTSH (Armour) and patient sera (Graves' and Hashimoto's disease) with TSH receptor antibody inhibited dose-dependently the binding of 125I-TSH to the receptor. TSH receptor antibody in LATS positive Graves' patients (50 cases) were all positive and in LATS negative Graves' patients were variable. However, there was no relationship between LATS activity and TSH receptor antibody activity. One case in Hashimoto's disease was positive (1/31). This means two kinds of TSH receptor antibodies (stimulating antibody and blocking antibody). Two sera of Graves' disease had strong binding to 125I-TSH. One case was LATS positive. The other was LATS negative. The binding was increased dose-dependently by serum and IgG amounts. The binding of patient serum with bTSH could be decreased by bTSH (especially after purification by thyroid receptor), but not by hTSH. This fact suggests that some Graves' sera contain the antibody for bTSH purified by thyroid receptor.

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**Prognosis of Threatened Abortion and Thyroid Function Test**

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To investigate the relation between prognosis of threatened abortion and thyroid function test, serum levels of RTU, T3, T4, TSH, TBG, FT4, and Estrogen (E2) were measured by RIA in 178 subjects without thyroid disease (101 normal pregnant, 78 patients with threatened abortion, 47 cured: 51 and 31 aborted: A after treatment). Serum levels of RTU were N32.3±0.9 (M±SE), C32.2±1.0, A36.5±1.1 at 6.7 gestational week (W), N30.5±1.1, C31.3±0.7, A33.6±1.0 at 8.9 W, N25.9±1.0, C27.0±2.1, A32.4±1.8 at 10.1 W, N23.2±0.7, C24.3±1.3, A31.4±1.5 at 12.13 W and N27.0±0.7, C24.0±1.0, A31.5±2.4% at 14.15 W. Serum RTU levels of A were higher but serum T4, TBG, and E2 levels were lower significantly than those of N or C in every period. There were positive correlations between serum levels of TSH and E2 levels of A, lower significantly than those of N or C in every period. There were positive correlations between serum levels of TBG and those of E2, T4, and FT4, and serum levels of FT4 and those of T3, T4, and FT with increased serum levels of RTU and decreased those of T4, TBG, and E2 were aborted in spite of treatment. These findings suggested that it was possible to judge the prognosis of threatened abortion using thyroid function test.

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**Thyroid Hormones of Elderly Home Residents, Hospital Out-Patients and In-Patients**


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Thyroxine (T4), Triiodothyronine (T3), and Thyroid-stimulating hormone (TSH) and TBG in serum were measured in elderly home residents (YOUKUIN) and out-patients and in-patients of our hospital. The following conclusions were obtained.

1) Serum level of TSH were not significantly different among home residents, out-patients and in-patients. There is no difference among sixties, seventies, eighties and nineties, either.

2) Serum thyroxine levels were significantly decreased in seventies and eighties of in-patients compared with the same age decades of home residents.

3) Serum triiodothyronine levels were decreased with advancing age in all three groups. They were also significantly decreased in in-patients compared with home residents in all age groups.

4) Serum TBG concentration of in-patients was significantly decreased compared with that of home residents in all age groups.

In in-patients serum TBG of eighties and nineties were significantly decreased compared with that of sixties.