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CLINICAL EVALUATION OF A RADIORECEPTOR ASSAY KIT FOR TSH-BINDING INHIBITOR IMMUNOGLOBULINS. J.Konishi, Y.Tida, T.Kousaka, T.Misaki, T.Nakajima, K.Endo and K.Torizuka. Kyoto University School of Medicine. Kyoto.

Clinical usefulness of a TSH-radioreceptor assay kit (B.R.Smith) was studied. Lubrol-solubilized porcine TSH-receptors used in the kit had an K_a of $4.7 \times 10^8 M^{-1}$ in the assay buffer. Sensitivity was $30 \mu U/ml$ in the presence of $50 \mu l$ serum (i.e. $180 \mu U/ml$ of serum). When immunoglobulin concentrates were used as samples, relative ^{125}I -TSH binding was $100 \pm 3.6\%$ (mean \pm S.D.) in 21 normal controls, while 22 out of 26 untreated patients with Graves' disease (85%) showed ^{125}I -TSH binding less than 92% of controls. Intra- and inter-assay C.V.s in the assay of TSH-binding inhibitor immunoglobulins (TBII) were 3-5% and 4-25% respectively. Potnet TBII were detected in 3 patients with pretibial 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, 20 normals ranged $100 \pm 8.3\%$. TBII 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 ^{125}I -TSH was elevated with the increasing globulin concentration, requiring an appropriate correction for the nonspecific precipitation in cases with hyperglobulinemia.

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PROGNOSIS OF THREATENED ABORTION AND THYROID FUNCTION TEST. S.Wanibe and N.Nihei. Dept. of Internal Medicine, Tokoname City Hospital, Tokoname and Dept. of 3rd Internal Medicine, Hamamatsu University, Hamamatsu.

To investigate the relation between prognosis of threatened abortion and thyroid function test, serum levels of RT_3U , T_3 , T_4 , TSH, TBG, FT₄ and Estrogen (E_3) were measured by RIA in 179 subjects without thyroidal disease (101 normal pregnancies: N, 78 patients with threatened abortion, 47 cured: C and 31 aborted: A after treatment). Serum levels of RT_3U were $N32.9 \pm 0.9$ (M \pm SE), $C32.2 \pm 1.0$, $A36.5 \pm 1.1$ at 6.7 gestational week (W), $N30.5 \pm 1.1$, $C31.3 \pm 0.7$, $A34.6 \pm 1.0$ at 8.9W, $N25.9 \pm 1.0$, $C27.0 \pm 1.2$, $A32.2 \pm 1.8$ at 10.11W, $N23.2 \pm 0.7$, $C24.3 \pm 1.3$, $A31.3 \pm 1.5$ at 12.13W and $N21.7 \pm 0.7$, $C24.1 \pm 1.0$, $A31.5 \pm 2.4\%$ at 14.15W. Serum RT_3U levels of A were higher but serum T_4 , TBG and E_3 levels of A were lower significantly than those of N or C in every period. There were positive correlations between serum levels of TBG and those of E_3 , T_3 or T_4 , and serum levels of E_3 and those of T_3 or T_4 , but there were negative correlations between serum levels of RT_3U and those of TBG or E_3 , and serum levels of FT₄ and those of TBG or E_3 in all subjects. In course observed patients with threatened abortion, all patients with increased serum levels of RT_3U and decreased those of T_4 , TBG and E_3 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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THE ASSAY OF TSH RECEPTOR ANTIBODY USING TSH RECEPTOR ASSAY KIT. M.Ishida, Y.Kajita, Y.Nakajima, Y.Ochi, T.Hachiya, T.Miyazaki and H.Ijichi. Nantan General Hospital, Kyoto prefectural University of Medicine, Kyoto, Shiga University of Medical Science, Otsu.

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 ^{125}I -bTSH to the receptor. bTSH (Armour) and patient sera (Graves' and Hashimoto's disease) with TSH receptor antibody inhibited dose-dependently the binding of ^{125}I -bTSH to the receptor. TSH receptor antibody in LATS positive Graves' patients (50 cases) were all positive and in LATS negative Graves' patients were about 64% positive. There was no relation 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 ^{125}I -bTSH. 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 displaced by bTSH (especially after purification by thyroid receptor), but not by hTSH. This fact suggest that some Graves' sera contain the antibody for bTSH purified by thyroid receptor.

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THYROID HORMONES OF ELDERLY HOME RESIDENTS, HOSPITAL OUT-PATIENTS AND IN-PATIENTS. T.Inaba, T.Yayabe, A.Kuroda, H.Murata, K.Chiba and H.Yamada. Tokyo Metropolitan Geriatric Hospital

Thyroxine (T₄), Triiodothyronine (T₃), Thyroid stimulating hormone (TSH) and TBG in serum were measured in elderly home residents (YOUIKUIN) 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.