Diagnosis of Thyroid Diseases by Thyro-Binding-Index

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Using “TBI Kit”, the thyroid function test was performed for more than 300 sera. The test procedure was investigated and the following results were obtained.

1) Results of the test were as follows:
- 0.86~1.09 (average 0.95) for 67 normal persons.
- 0.50~0.86 (average 0.70) for 52 cases with hyperthyroidism.
- 1.11~1.12 (average 1.12) for 2 cases with hypothyroidism.
- 0.89~1.05 (average 0.97) for 25 cases of non-toxic diffuse goiter.
- 0.85~1.11 (average 0.95) for 14 cases of non-toxic nodular goiter.
- 0.63~0.92 (average 0.78) for 2 cases of subacute thyroiditis.
- 0.63~0.92 (average 0.95) for 9 cases of chronic thyroiditis.
- 0.86~1.13 (average 0.99) for 50 cases of curved hyperthyroidism with $^{131}$I.

2) In cases of hyperthyroidism which were treated with $^{131}$I, TBI-test were performed monthly, and the results of the test returned to normal when cured effectively, and demonstrated a significant parallelism with clinical symptoms and other laboratory data.

3) TBI-test was compared with Triosorb test. Results obtained by both methods are in good correlation, especially in hyperthyroidism. However, in euthyroid, the correlation is not so good as hyperthyroidism.

4) The test procedure was investigated on:
a) incubation temperature (15°C, 25°C) b) incubation time (30, 60, 90, 120, 180 min).

Correlation between the Liver and Catabolism of Thyroidal Hormones

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Study on the functional relationship between the liver and thyroxine catabolism is reported in this paper.

Three groups of the normal rats were used throughout these experiments. The rats of group I were administered with $^{131}$I-T$_4$ intravenously, those of group II with $^{131}$I-T$_3$ and those of group III with $^{131}$I-Na.

Three hours following the administration of 50 micro curies of $^{131}$I-T$_4$, $^{131}$I-T$_3$ or $^{131}$I-Na, the radioactivities per gm in the blood, bile, kidney, spleen, thyroid, stomach, small intestine and muscle of those animals were determined.

Radioactivity ratios of the liver and bile to the blood in group I were higher than those in group III, while the ratios of the kidney, spleen, stomach, small intestine, thyroid and muscle were lower than those in group II or III. All tissues in group II except stomach had the highest ratio among the three groups.

The highest ratio about the stomach was found in group III. T.C.=t/B × 100 (“t” indicates the radioactivity per gm in a tissue, “B” indicates initial dose per gm in total body) represents tissue concentration of the radioactivity (percentage) in the blood, bile, liver, kidney and muscle three hours after the administration. The blood and liver in group I showed the highest T.C. among the three groups. In group II, radioactivity of the bile, kidney and muscle were concentrated the most among the three groups, especially this phenomenon was remarkable in the bile, while the blood was the lowest in the uptake. All tissues in group III except blood showed the lowest T.C.

In order to analyse the $^{131}$I compounds in the bile, the specimen of bile collected through the canulation of choledochus one,