

XIV. T₄

A Trial in Measuring the High Concentration of Serum Thyroxine over 25 μ g/100 ml by Tetrasorb Resin Sponge Uptake in the Hyperthyroidism

K. TAKIZAWA, S. WADA and S. SHIMODA

*Department of Radiology and Department of Internal Medicine,
Ohta General Hospital, Ohta
and First Department of Internal Medicine, Gunma University, Maebashi*

Recently, although thyroxine (T₄) concentration has been measured by tetrasorb resin sponge uptake, when the concentration of T₄ was over 25 μ U/100 ml in the patient with hyperthyroidism, this method can not be applied. Therefore, we tried to measure such high concentration of T₄ using diluted serum. In the present experiment, various concentration of T₄ in the serum from hypothyroidism to hyperthyroidism was diluted by physiological saline as followed; serum: physiological

saline = 1:1 (1/2 diluted serum) and 1:2 (1/3 diluted serum). Since in either 1/2 diluted or 1/3 diluted serum with less than 25 μ U/100 ml of T₄, T₄ concentration measured by tetrasorb resin sponge uptake was clearly corresponded to the value by the original method, it was thought that T₄ concentration more than 25 μ U/100 ml in the serum could be measured by tetrasorb resin sponge uptake using 1/2 or 1/3 diluted serum.

Clinical Evaluation of the Res-O-Mat T₄ Test

M. HAYASHIDA, T. SHIMADA, H. OHARA and T. WADA

Department of Internal Medicine (Section I), Sapporo Medical College, Sapporo

The Res-O-Mat T₄ test, which fundamentally concerned with the competitive protein-binding analysis, was studied as a link in a series of clinical evaluation studies of the thyroid function tests. Patients with hyperthyroidism or hypothyroidism, as well as normal control subjects, patients with simple goiter and pregnant women, were subjected to the study, and the results were compared with the results of other thyroid function tests, i.e., basal metabolic rate (BMR), protein-bound iodine (PBI), ¹³¹I-triiodothyronine resin sponge uptake rate (T₃ RSU) and serum thyroxine level

as estimated with the Tetrasorb-125 Kit. In addition, the results were compared with serum levels of β -glucuronidase activity, the association of which with functional state of the thyroid has been reported from this institute.

1) Effects of either oral or intravenous administrations of radiological contrast media containing organic iodine, effects of long-term freezing of serum samples, and the effects of changes in incubation period were studied, and it was found that these did not affect the results of the Res-O-Mat T₄ test.