thyroid hormones. There have been reported several methods to determine tissue concentrations of thyroid hormones, i.e., 1) ethanol extraction, 2) butanol-chloroform-ammonia extraction (ammonia 3x), and 3) butanol-chloroform-ammonia extraction (ammonia 1x). In the present experiment, the above published methods were compared with a method using small Sephadex G-25 columns in which tissue homogenates were dissolved in 1.5 N NaOH and then applied to the Sephadex columns. The rest of the procedures was the same as that in the measurements of serum T₃ and T₄ concentrations by Seraluter and Tetruluter.

Parallelism of dilution curves of extracts to the standard curve were not observed in either ethanol extraction or butanol-chloroform-ammonia (3x) extraction. Good parallelism was obtained in the method of butanol-chloroform-ammonia (1x) extraction, but recovery of both T₄ and T₃ were low. In the method to extract and determine T₃ and T₄ by Sephadex G-25 column, both parallelism and recovery were satisfactory and hence, this method could be considered to be the most useful method to determine tissue T₃ and T₄ concentrations.

Serum Thyroid Hormone Levels in Patients with Liver Diseases and Schistosomiasis Japonica

K. Kitani, K. Shibata**, M. Iuchi***

*First Laboratory of Clinical Physiology, Tokyo Metropolitan Institute of Gerontology
**Hechst Japan, ***Kofu City Hospital

The levels of thyroxine (T₄), triiodothyronine (T₃) and thyroxine stimulating hormone (TSH) were measured for sera obtained from patients with Schistomosis japonica and various liver diseases by using radioimmunoassay kit (RIA) (Riagnost). Thyroxine bidding capacity (TBC) was also measured by competitive protein binding assay method (CPBA).

The average values (TBC%, T₃ ng/ml, T₄ µg/dl, TSH µU/ml) were 101.32±9.68, 0.93±0.64, 9.79±4.44, 7.21±3.12 in patient with hepatitis (n=59), 100.2±17.2, 0.78±0.37, 8.29±2.72, 6.85±3.90 in liver fibrosis (n=29), and 101.13±11.5, 0.56±0.36, 6.95±2.86, 9.60±4.46 in liver cirrhosis (n=59). T₃ values in patients with hepatitis was inversely correlated with age (r=−0.41, p<0.01). T₄ values measured by RIA method were always lower than those by CPBA method, the relation being Y (RI)=-0.423 × (CPBA)+1.371 r=0.539, p<0.01, n=40).

A significant decrease in T₃ value and almost normal T₄ level and slightly increased TSH level are compatible with the view that the liver may play a significant role in peripheral T₄→T₃ conversion in man.

Diagnosis of Thyroid Tumors by Thyroid Scanning with 201TI and 131I

M. Kubota, S. Konno, O. Okubo, M. Yukawa and T. Takahashi

Department of Radiology, Sapporo Medical College, Sapporo

We used the thyroid scanning with 131Cs or 201TI for determining whether a thyroid tumor is malignant or not. Cesium is a monovalent cation and belongs to IA group in the periodic table. Though thallium belongs to IIIA group, it is a monovalent cation. Therefore thallium may be biologically similar to cesium. 1) Thyroid scans were performed on 44 cases of thyroid tumors with 131Cs and 19 cases of thyroid tumors with 201TI, histologically verified by surgery. The percent positive scan of 28 cases of malignant tumors and 16 cases of benign tumors using 131Cs were 71.4% (20/28) and only 12.5% (2/16) respectively. Twenty of 22 cases of positive scan with 131Cs