

sibility of forming various compounds or complexes.

The organs in which Tc-99m can be applied as a scanning agent are thyroid, brain, liver, spleen, bone marrow, mediastinum, placenta, ventilation lung and kidney. We recently had a chance to use this nuclide for the organ scannings of our cases. The followings are the results.

The scanning of thyroid was performed by per os administration of TcO<sub>4</sub>. The thyroidal uptake of Tc-99m was 3-4% in normal cases and 20-30% in hyperthyroidisms within 1 hour. Therefore the scanning was possible 1 hour after the administration.

Brain scanning was performed by intravenous injection of TcO<sub>4</sub>. The presented case is 60 year old female. The activity accumulated in salivary glands and sagittal sinus.

Tc<sub>2</sub>S<sub>7</sub> colloid was prepared according to Richards and Harper. There is another method reported by Stern et al. But we adopted the former because by the latter method the contents of sulfur in the colloid is greater. Using this preparation we performed the liver scanning and bone marrow scanning for the 56 year-old male. For the bone marrow scanning we used 16 mc of Tc<sub>2</sub>S<sub>7</sub> colloid and results were satisfactory.

When reduced to lower valence by ascorbic acid Tc-99m makes complex with human serum albumin. We performed the blood pool scanning using this preparation. We also performed ventilation scanning of the lung using IPPB. For this scanning the nuclides of short life is mandatory and Tc-99m albumin was satisfactory for this purpose.

### III. Endocrinology

#### Clinical Studies on the Abnormality in the Secretion Rate and Metabolism of Cortisol, Corticosterone and Aldosterone Using Radioactive Steroids

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The present paper is concerned with the secretion and metabolism of cortisol, corticosterone and aldosterone using radioactive steroids in normal persons and in many patients with various diseases.

Since last year further studies have been made and a few interesting results were obtained.

1 Cortisol: In Cushing's syndrome the decreases in the ratios cortolone/cortol, Allo-THF/THF and THE/THF were statistically significant. On the contrary, in hyperthyroidism all these ratios showed statistically significant increases. In simple obesity, iatrogenic hypercorticism, hypothyroidism and liver cirrhosis no definite changes in

these ratios was confirmed.

2 Corticosterone: Allo-THB/THB ratios were determined in normal controls and in patients with various diseases. In Cushing's syndrome the ratio was found to be reduced. In one of two cases with hyperthyroidism it increased remarkably, but in hypothyroidism a fairly opposite result was obtained.

3 Aldosterone: Infusion of pressor dose of synthetic angiotensin II augmented secretion rates of aldosterone in 6 out of 9 cases. Two out of 3 cases showing no increase were normal controls and the other was a case of liver cirrhosis with ascites. Non pressor dose brought forth no increase at all in all the cases examined.