demonstrated steeper elevation of C segment than the latter. The explanations for these findings are speculated as following; transplanted kidneys at rejection phenomenon are remarkably swollen, which results in intrarenal stasis of urine due to elevation of intrarenal pressure. Secondarily, dilatation of urine space in transplanted kidneys results in relative increase of dead space of urine accompanied by decrease of urine volume.

Thirdly, obstruction of urine flow are the sequela of rejection phenomenon itself due to edematous change in the ureteral mucosa.

Anyway, the mechanism of rejection phenomenon has not been well explained from the point of kidney function and each segment of renograms represents complicated factors of kidney function which is unable to give precise evaluation of each segment of renograms obtained from transplanted kidneys.

Clinical use of Indium 113 m for Kidney Scanning (II)

T. Imaeda, K. Nishioka and K. Senda

Department of Radiology, School of Medicine, Gifu University, Gifu

Methods: Toshiba RDS-6 Scintiscanner, Cristal 3×2 inches (NaI), collimator 37 holes, Focus 10 cm honeycone were employed.

The kidney scanning was begun immediately and performed within 30 minutes after intravenous injection of 6 mCi of Indium 113m with patient usually prone and occasionally supine.

Material: Until recently, chlormerodrin (Neohydrin) labeled with radioactive mercury (^{203}Hg) was employed in kidney scanning. However, the renal exposure from the radioactive material was high.

About a half year ago we reported kidney scanning, using Indium 113 m FeEDTA or FeDTPA ascorbic acid, for renal localization.

And presently, 500 mg of probenecid are given per os 30 minutes perior to the scan in an attempt to block renal filtration of Indium 113 m.

Results: Indium 113 m FeDTPA ascorbic acid was better suited for use in kidney scanning than Indium 113 m FeEDTA because of its high ratio of kidney/liver were found in experiment in rats.

In addition, the scan after made preparation of "Probenecid" showed better localization of Indium 113 m in the kidney than no "Probenecid" in man.

The usefulness of kidney scanning using Indium 113 m can be seen in the following,

(1) detection of renal position, size
(2) differential diagnosis of abdominal masses in child.

Studies on Measurement of Plasma Volume and Extracellular Fluid Volume (Radiosulfate Space)

K. Kanatu, A. Hara, Y. Nohara and M. Takayasu

The Third Department of Internal Medicine, Kyoto University, Kyoto

The plasma volume and the extacellular fluid volume (E.C.F.V.) are generally measured b ythe isotope dilution method, in which those volumes are calculated from single blood samples or obtained by the extrapolation of the disappearance curve to the time of injection.

The plasma volume is, as a rule, calculated fro mthe ten minutes sample.

In measurement of the E.C.F.V., however, some investigators calculate it from the twenty minutes sample, but others obtain it by the