drin was also performed.

Result:

1) It was shown by macroautogram that $^{203}\text{Hg}$-Neohydrin was accumulated in the renal cortex maximally at 1 hr. MAA was shown histologically in the capillaries of the renal cortex and renal arteries and veins.

2) Renoscintigram by $^{203}\text{Hg}$-Neohydrin showed deformity of the kidney and in homogeneous R.I. uptake which were compatible with the Nephrogram of the renal arteriography.

The Measurement of Glomerular Filtration Rate Using $^{131}\text{I}$-Sodium Iothalamate

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Clinical evaluation of the measurement of glomerular filtration rate using $^{131}\text{I}$-sodium iothalamate (Glofil 131) were discussed.

Methods and results were as follows.

1) Urines were collected 15, 30, 60 and 120 minutes after the intravenous injection of 20 microcuries $^{131}\text{I}$-sodium iothalamate, and urinary excretion rates were calculated.

In 10 individuals with normal glomerular function, average urinary excretion rates were 17.0, 29.7, 43.8 and 60.2% respectively, whereas in those with glomerular impairment, the rates were found lower, and the significant difference was seen between both groups.

Thus, the measurement of the excretion rate of $^{131}\text{I}$-sodium iothalamate is useful in screening glomerular function as P.S.P. test for tubular secretion.

2) Clearance of $^{131}\text{I}$-sodium iothalamate and sodium thiosulfate were simultaneously measured after the simultaneous administration of two agents by the constant infusion technique, in totally 32 individuals with and without renal impairment.

The doses of $^{131}\text{I}$-sodium iothalamate given for the clearance study were between 70 and 100 microcuries.

Good correlation was seen between clearances of $^{131}\text{I}$-sodium iothalamate and sodium thiosulfate, and the clearance ratio of $^{131}\text{I}$-sodium iothalamate to sodium thiosulfate was approximately 0.8.

Accordingly, the measurement of glomerular filtration rate using $^{131}\text{I}$-sodium iothalamate should be significant clinically.

3) The binding rate of $^{131}\text{I}$-sodium iothalamate with red cell and plasma protein were as low as 0.16 and 5.2% respectively.

4) Radiorenogram using $^{131}\text{I}$-sodium iothalamate were recorded, and compared with that using $^{131}\text{I}$-sodium hippurate (Hippuran).

The renographic curves by $^{131}\text{I}$-sodium iothalamate were found to be consisted of three segments as those by hippuran, though the first segment was mainly formed by the vascular one, differing from that with hippuran, and the second segment rose only one-fifth as rapidly as with hippuran, because the bulk of the tracer remains in the vascular bed, whereas with hippuran up to 80~90% is retained by the kidney during its first passage.

Peak activity was reached at approximately the same time with both agents.

The third segment declined much more slowly, reflecting the slower excretion of $^{131}\text{I}$-sodium iothalamate.