

longer than 6 minutes was seen in patients who showed a mild decrease in RPF and GFR. The decreased function type (Type M1) with $\tan \theta$ larger than 1.0 and Ht exceeding 6 minutes was seen in the patients in whom PSP, RPF and GFR were moderately decreased. The deteriorated function type (Type L) was seen in patients with renal insufficiency. The abnormal excretion type (Type M2) was not encountered in the present series.

The renal arteriography was also performed on young hypertensive patients. In 4 of such patients in whom the renograms of both kidneys were of the same type but differed in the maximum cps, the arteriography disclosed no

abnormality, whereas in 3 other patients in whom the renogram of one kidney was different in type from that of the other kidney, abnormalities of the renal vessels were demonstrated in the arteriography.

In the patients with wandering kidneys, it was sometimes observed that the renogram of one kidney was different in type from that of the other kidney when the patient was in sitting position, but the difference was no longer evident when the renogram was taken with the patient lying on the abdomen. This observation shows that we must be careful in making diagnosis of renovascular hypertension on the basis of renographic findings.

Studies on the Radioisotope Renogram in Senile Hypertension

S. ABE, Y. YONAHARA and I. KURAMITSU

The Second Tokyo National Hospital

Purpose and Method:

Senile hypertension is characteristic of systolic high blood pressure and good prognosis on the basis of sclerosis of elastic arteries especially thoracic and arcus aorta. In such view points it must be strictly distinguished from essential hypertension. In order to find the relationship between the renogram and laboratory data of senile hypertension, physical examination, fundoscopic test, laboratory studies of urine, serum electrolyte and total cholesterol, X ray photograph of the chest, ECG, PSP excretion test and renograms were carried out for the 40 out patients over 60 years old, who had systolic level of higher than 150 mmHg, and no past history concerning hypertension.

On analysing the renograms, total concentration (TC), minute concentration (MC), minute excretion (ME) were calculated by Krueger's method, and time from maximum counting rate to half value on c-segment ($T_{1/2}$), angle of b-segment (θ) were measured.

Results:

The renogram appeared following out comes in senile hypertension; TC: $64.5 \pm 12.2\%$, MC: $26.8 \pm 6.9\%$, ME: $14.1 \pm 6.1\%$, $T_{1/2}$: $7'47''$

$7'47'' \pm$

$2'54''$, θ : $57.2^\circ \pm 9.5^\circ$. All these values were some what inferior to those of the normotensive group of same age, but presented prominent decrease of ME and prolongation of $T_{1/2}$ compared with those of juvenile hypertensive and healthy group from 15 to 35 years old. Spread of the data was also remarkable in senile hypertension. PSP excretion rate correlated positively to MC, ME and θ (coefficients of correlation: $+0.477 \sim +0.678$), inversely to $T_{1/2}$ (coefficients of correlation: $-0.561 \sim -0.598$). Systolic blood pressure revealed positive correlation to MC and ME but diastolic pressure did nothing peculiar. The higher grade of Keith Wagner, the lower MC, ME and cases having ECG abnormalities also indicated decrease of ME. Serum cholesterol, cardio-thoracic ratio, nycturia, urinalysis did not correlate to MC and ME.

Conclusions:

In senile hypertension renogram data showed inclination of negative correlation to systolic blood pressure but no significant difference to those of senile normotensives. Fairly good correlations were recognized between MC, ME and PSP excretion rate.