

and besides the possibility of detecting renal function by renal uptake of  $^{203}\text{Hg}$ -neohydrin prior to renography.

3) The estimation of renal function by renogram

Renogram was proved to be useful test of each renal function but its estimation so far is settled neither quantitatively nor qualitatively. Renogram can be clinically analyzed into the following 5 types from its characteristic pattern, standard, delayed, hypofunctional, non-functional and obstructive.

In practice many misinterpretation may occur unless careful evaluation is made because the result must be influenced by uncontrollable factors such as the difference of amount of radioactivity injected, the position of detectors and the distance between the detectors and the kidneys. On the other hand, the pattern of renogram

can be obtained on log-ratemeter-recorder without risk of misinterpretation.

4) Examples of the practical application of renogram

Although characteristic figure of renogram is obtained on respective renal diseases, it is impossible to make the final diagnosis from renogram alone. But renogram was more informative in cases with renal hypertension, ureteral disease, hydronephrosis, movable kidney, tumor and stone.

To sum up, the instance of the renal diseases in which renography is really indispensable is relatively rare but in the cases with movable kidney and ureteral stone renogram is most helpful to interpretation of function of each side of the kidneys.

Several interesting cases were demonstrated.

## The Radiation Effect of Radio-Neohydrin to the Kidney

T. MINAMI, M. MIKI and A. ISHIBASHI

*Department of Urology, The Jikei School of Medicine, Tokyo*

H. ANDO and T. MACHIDA

*Department of Urology, The Toho School of Medicine, Tokyo*

The radiation effect of Neohydrin  $^{203}\text{Hg}$  to the kidneys with the doses of less than 10  $\mu\text{C}/\text{kg}$  and the resulting histological changes (i.e. swelling of the primary tubular cells, hyaline droplet degeneration and swelling of the glomerulus and its adhesion with the Bowman's capsule) has already been reported in our previous paper (Japanese Journal of Nephrology, vol. 6, 1964).

In this study, a series of experiments was performed to investigate the radiation effect of Neohydrin  $^{197}\text{Hg}$  to the rabbit's kidneys.

The rabbits were divided into three groups according to their doses administered (10  $\mu\text{C}/\text{kg}$ , 100  $\mu\text{C}/\text{kg}$  and 200  $\mu\text{C}/\text{kg}$ ) and their results were compared with that of the control group with 0.5 cc of plain Neohydrin.

The animals were sacrificed on 2nd, 5th and 7th day after the administration and their kidneys were taken out immediately and presented for study. The results were as following;

The radiation effect of Neohydrin  $^{197}\text{Hg}$  was noticed in all the three groups and their characteristic histological changes were consisted of slight swelling of the primary tubular cells and proliferation of the mesangial cells. These changes were most remarkable on the 2nd day after the administration and quick recovery was also noted in a week.

As a conclusion, Neohydrin  $^{197}\text{Hg}$  should be preferred as a better test material for renoscintiscanning to Neohydrin  $^{203}\text{Hg}$ , because of its less ill effect and quick recovery.