

The terms cortex, medulla and pelvis are not meant to be synonymous with the true anatomic compartments. In this study the right kidney was chosen mainly and the collimator was placed on the middle clavicular line of the right costal arch. In the normal subjects Neohydrin was observed at the highest radioactivity in the cortex, the second in the medulla and the third in the pelvis. The composite curve resembled closely the renal accumulation curve. The pelvis had the highest radioactivity with Hippuran and it resembled the composite total kidney activity, which resembled renogram. The medulla and cortex had the same radioactivity, but lower than the pelvis. The pelvis had also the highest radioactivity with RISA and paralleled the

composite curve. The medulla and cortex had the same radioactivity, but lower than the pelvis. Therefore, it was considered that the renogram pattern was mainly made of pelvic radioactivity and particularly of the vascular component. In the patient with chronic nephritis that had reduced renal function, all the three compartments had nearly the same radioactivity with Neohydrin, and its accumulation was very poor. The same pattern was observed both with Hippuran and RISA. Only the pelvis had a little higher radioactivity in both tests.

Thus, it may be concluded that the autoradiography was very useful in the quantitative analysis of the compartmental renal function.

A Comparative Study between Differential Renal Function Test by Means of ^{203}Hg -Neohydrin and Renal Clearance

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The method and value of the differential renal function test by means of external scintillation counting method using ^{203}Hg -Neohydrin were already read at the 4th General Meeting of the Japanese Association of Nuclear Medicine (1964).

This paper is to report, the results of the renal uptake rate and split renal clearance (CPAH) measured on 32 patients, 49 kidneys (contained 17 remaining kidneys). Five μCi of ^{203}Hg -Neohydrin was administered intravenously and its renal accumulation was detected an hour after injection. The patients were placed in prone position, and the renal uptake counts were measured on their posterior axillary lines. The renal uptake of ^{203}Hg -Neohydrin was expressed in percentage of

the administered dose, which was counted 10cm apart from the top of the collimator. Ureteral catheterism was performed carefully, to avoid leakage of urine.

There was a higher correlation between the renal uptake rate and CPAH in 17 remaining kidneys than that of the 32 kidneys employed ureteral catheterism.

Though there were some difficulties in the counting uptake rate because of anatomical and radiological reasons, but it was thought that this method might be reliable as well as split renal clearance test. Also, this method will be useful as a screening differential renal function test, because of its technical simplicity.