

## K. Kidney

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REEXAMINATION OF NORMAL Tc-99m-DTPA RENO-SCINTIPHOTO. S. Ikeda, S. Egawa, K. Lee, A. Fujino, A. Ishibashi, and J. Kurokawa. Kitasato university, school of medicine, Kanagawa.

We reexamined the 114 cases of normal ROI curve getting from Tc-99m-DTPA reno-scintiphography. Cases were divided in two groups: transplanted kidney (group A) and non-transplanted kidney (group B). This time, we compared the some kinds of parameters of ROI curve with 24 C-Cr.

In group B, slight correlation ( $r=0.5-0.7$ ) were showed in renogram index, concentration rate, excretory rate and time from injection to peak with 24 C-Cr. However, parameter relating to excretion, for example, excretory angle and time from peak to 75% of peak did not correlate with 24 C-Cr.

In group A, every parameter did not correlate with 24 C-Cr.

These results indicated that it is difficult to detect the quantitative value about renal function from simple parameter of ROI curve. According to group A, perfusion index might be a good indicator to detect the renal function.

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CORREIATION OF RPF WITH RENOGRAM AND CYSTOGRAM. M. Maeda, M. Yamaguchi, R. Hasegawa and H. Yoshida. Department of Radiology, JNR. Osaka Hospital.

131 I-Hippuran renogram was obtained by the use of a gamma camera with a parallel hole collimator and the first 1-2 minute counts were expressed as percent of counts injected after the depth correction was made. This uptake rate (%) correlates closely with 30 minute urinary excretion rate (%) which can be used to calculate RPF.

30 minute excretion rate in the bladder by external counting (gamma camera) method showed a good correlation with the rate by urin sampling method, when the correction of bladder depth was made.

Therefore, RPF can be easily estimated from 1-2 minute excretion rate in the bladder by the use of a gamma camera.

Coefficient K derived from the accumulation curve (cystogram) on the bladder also showed a correlation with RPF.

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EVALUATION OF METHOD OF RENAL FUNCTION ANALYSIS BY RENOSCINTIGRAPHY. Hajime Fujii, Fumio Tanaka, Toshinobu Fukushima, Yukio Takayama, Hiroto Washida, \*\*Jiro Kato. \*Anjo Kosei Hospital. Anjo. \*\*Nagoya City University. Nagoya.

The renal clearance and Filtration Fraction were able to analyze by renoscintigraphy using Tc-99m-DTPA. 10mCi of Tc-99m-DTPA was injected intravenously as a rapid bolus and sequential images of the kidney were recorded one second for 72 frames and 6 seconds for 244 frames. The time activity curves were obtained from the ROI in both kidneys, left ventricle (LV), and each background. The time activity curves of LV was fitted a exponential function by the method of least squares. Volume of circulation plasma flow of the patient was obtained from standard plasma flow. DTPA-clearance was obtained from  $T(1/2)$  and volume of circulation plasma flow. DTPA-FF was determined by correlation peak value of initial blood flow phase and integral value of concentration phase. It was adequate correlation between DTPA-FF and FF using conventional method. Without blood and urine collection, the accuracy and easiness make this method very useful in practical renal function test.

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EVALUATION OF PARAMETERS OF RENAL FUNCTION USING Tc-99m-DTPA IN SOLITARY KIDNEY PATIENTS. Hiroto Washida, Masayuki Tsugaya, Noriaki Hirao, Yusuke Hachisuka, Hajime Fujii, Toshinobu Fukushima, Yukio Takayama. Anjo Kosei Hospital, Anjo.

There are several reports of evaluation of renal function tests using renoscintigraphy. It is well known that Tc-99m-DTPA pass through the glomelus. In this study, we attempted to evaluate renal function parameters calculated from Tc-99m-DTPA comparing the parameters from classical methods. Patients were consisted from 23 cases (8 males, 15 females), whose age was ranged from 19 to 78 year-old, and mean was 55.7 year-old. Time after the nephrectomy was ranged from 3 months to 28 years and mean was 6.5 years. Nephrectomy was performed in 11 cases on the left side and 12 cases in the right side. There were adequately correlated between creatinine clearance and DTPA-clearance ( $r=0.902$ ), GFR and DTPA-clearance ( $r=0.927$ ), filtration fraction (FF) and DTPA-FF ( $r=0.930$ ) DTPA-RPF was calculated from the results and compared with RPF. It was correlated between DTPA-RPF and RPF ( $r=0.925$ ). In conclusion, renal function parameters calculated from Tc-99m-DTPA are usefull for understanding the separated renal function in practical nephrology. The methods of the calcaultion was reported by Fujii at this meeting (Abstract No. 321).