We reexamined the 114 cases of normal ROI curve getting from Tc-99m-DTPA renal-scantigraphography. 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=0.0-0.7) were showed in renogram index, concentration-time, 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.

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 back ground. 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-FP was determined by correlation peak value of initial blood flow rate and integral value of concentration phase. It was adequate correlation between DTPA-FP and FP using conventional method. Without blood and urine collection, the accuracy and easiness make this method very useful in practical renal function test.

There were adequately correlated between creatinine clearance and DTPA-clearance (r=0.902), GFR and DTPA-clearance (r=0.927), filtration fraction(FP) and DTPA-FP (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 useful for understanding the separated renal function in practical nephrology. The methods of the calculation was reported by Fujii at this meeting (Abstract No. 321).