intravenously, and 0–10, 15–25 seconds for perfusion phase, followed each two minute images for accumulation phase and excretion phase, were taken for about 20 minutes. The area of interest, kidney and urinary bladder, were prepared by the minicomputer attached with the scinticamera.

Acute tubular necrosis usually occurred immediately after cadaveric transplantation. In its condition, $^{99m}$Tc-DTPA imaging gives a good information about the reversibility of the transplants. When perfusion images are delineated clearly, it will not be long before the renal function recovers.

In one case, minor change of rejection in addition to ATN was clearly revealed by the scinticamera. When the rejection occurred while ATN is still present, more decreased perfusion images are always present. For this reason, repeated studies are essential.

Obstruction of major arteries are often encountered after cadaveric transplantation. In two cases of arterial stricture, hypertension and oliguria ensued for 2 to 3 months after transplantation. Renoscintiphoto closely paralleled the clinical course.

Serial dynamic studies with $^{99m}$Tc-DTPA are a useful method of monitoring cadaveric renal transplants.

Clinical Evaluation of $\beta_2$-Microglobulin in Urine of the Renal Transplantation


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By the end of October, 1976, 73 renal transplantations were performed at Kitasato University Hospital. $\beta_2$-microglobulin in the urine were measured in 16 cases. From these cases, 500 samples of urine were tested in radioimmunoassay with Padebas $\beta_2$-micro test kit, offered from Daiichi Radioisotope Laboratory. Small samples were taken from each 24 hours' accumulated urine, and measured postoperatively daily during the first one to two weeks, then 2-3 times a week. Reproducibility proved to be satisfactory, mean coefficients of variation (C.V.) was 13.8%. The values of the $\beta_2$-microglobulin in the urine were measured in mg/l, higher than described normal values, in $\mu$g/l. Maximum value was over 130 $\mu$g/l. 13 patients were measured for $\beta_2$-microglobulin in the urine, blood urea nitrogen (BUN) and serum creatinin. Of these cases, 4: no apparent rejection; 7: rejection; 2: others. In the 7 rejection cases, which showed increase in values of the $\beta_2$-microglobulin in the urine which correlated with rejection; one case showed decrease in value; in 3 cases, there was no apparent variation in the values. Therefore constant values of the $\beta_2$-microglobulin in the urine may be indications of the function of transplanted kidney and extreme change in the values may indicate acute rejection in the renal function.

Evaluation of the Measurement of Urinary and Serum $\beta_2$-Microglobulin in Various Urogenital Diseases

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A low molecular weight $\beta_2$-gulobulin ($\beta_2$-microglobulin: MW: 11800) occurs in low concentrations in the urine, serum and other biological fluids. The present clinical application for the measurement of the $\beta_2$-microglobulin is the determination of the glomerular or tubular function in various uro-