430

EVALUATION OF RENOSCINTIGRAM WITH COLD PRESSOR TEST (CPT) IN HYPERTENSIVE PATIENTS USING FRACTIONAL RENAL UPTAKE OF Tc-99mDTPA.

N.Kataoka, H.Tatsukawa, T.Mizuno, H.Tsuji, Y.Maeda, Y.Okajima, T.Mineo, K.Miyao, T.Ozeki, M.Murata and H.Kotera. Kyoto 2nd Red Cross Hospital.
M.Oguro. Saiseikai Suita Hospital.

Using renoscintigram with CPT utilizing temporally spaced double doses of Tc-99mDTPA (Gates), and Ho value of renal function (Diffy), were investigated in 16 hypertensive patients (HT group), WHO I-II stages, and 8 normal subjects (N group). There were no significant difference between GFRs and Ho values on 1st and 2nd testings with half an hour's interval without CPT,in at random 6 subjects. A significant difference was found in glomerular filtration rate (GFR) without and with CPT in HT group. The rate of decrease in Ho values in CPT was distinct in both groups. These results may indicate that in hypertensive patients, autoregulatory mechanism of GFR is impaired, and that if Ho reflects renal plasma flow, which Maeda has supposed, in HT and N groups, renal plasma flow decreased in CPT.

431

ASSESSMENT OF MEAN TRANSIT TIME BY Tc-99m DTPA IN VARIOUS RENAL DISEASES.

M.Ishibashi,S.Morita,R.Dannoura,N.Umezaki, H.Ohtake.Department of Radiology, Kurume University School of Medicine, Kurume.

By converting the renogram curve using a deconvolution analysis,the mean transit time (MTT) and the parenchymal transit time (PTT) were obtained. The relationship of MTT and PTT to various renal diseases was evaluated.
A total of 147 renal diseases were studied, including essential hypertension,reno-vascular hypertension,diffuse parenchymal disease,chronic renal failure,hydronephrosis and renal calculus. The age of these patients ranged from 0.4 to 76 years.
MTT appeared to be useful in judging the efficacy of treatment in obstructive nephropathy such as hydronephrosis and renal calculus,and PTT was valuable in reno-vascular hypertension.

433

THE EVALUATION OF SPLIT RENAL FUNCTION IN THE EXPERIMENTALLY INDUCED VASCULAR OCCLUSION.

T.Takakyama,T.Aburano, N.Syuke K.Kinuya, K.Koizumi, N.Tonami, K.Hisada. Kanazawa University Hispital, Kanazawa

The split renal function was measured in order to evaluate the alteration of renal function secondary from transient occlusion of unilateral renal artery or vein. Seven microcuries of Tc-99m-DTPA and 3 uCi of I-131-OIH were injected into the bilateral femoral veins of mail rats 30 min, 3hr,6hr, 2days and 1 week after the release of unilateral renal artery or vein occlusion for half an hour. Blood samples were taken from the tail vein 5,10,15,20 and 30 min. after the radionuclide injection. Immediately after taking blood sample at 30 min, both kidneys and urinary bladder with ureters were taken. The radioactivities of Tc-99m and I-131 of these samples were measured respectively using a well type scintillation counter at the energy ranges of 140 KeV and 360 KeV 25%. In the renal artery or vein occlusion, the excretion rats from the affected kidney of I-131-OIH and Tc-99m-DTPA was decreased between 30 min. and 6hr after the release. The blood clearance showed the minimal value 30 min. after the release of renal artery occlusion and 3 hr after the release of renal vein occlusion. The filtration fraction obtained by dividing the clearance of Tc-99m-DTPA by that of I-131-OIH at the affected side was decreased. The decrease in GFR was more than that in ERPF.

434

THE ROLE OF RENOSCINTIGRAPHY IN RENAL TRAUMA.

S. Egawa, M. Iwamura, A. Fujino, S. Ikeda and A. Ishibashi. Kitasato University, Sagamihara.

A total of 44 cases of renal trauma was studied. Renoscintigraphy and other imaging techniques were compared in terms of its efficacy. The positive rate of each examination was as follows; angiography 16/20 (96.0%), computed tomography 17/18 (94.4%), ultrasonography 16/20 (80.0%), renoscintigraphy 21/25 (84.0%) and excretory urography 22/30 (73.3%). Since 50% of the cases had other organ involvements, computed tomography and angiography were the most effective examinations in the emergency states. Renoscintigraphy was performed on 1.9 times a case on average (1 to 5 times) and valuable informations were obtained in each examination. Renoscintigraphy can afford exact informations about the states of the whole and regional renal blood flow and the function of parenchyma. In addition, renal contusion can be delineated best by this technique.

Renoscintigraphy is a very useful and sensitive means to follow the prognosis of the impaired renal function after the trauma.