**AN ANALYSIS OF EARLY PHASE RENOGRAム USING FAST FOURIER TRANSFORM.**

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There are many informations in the renogram by the dual time interval method with 9mTc-DTPA. Early excretory phase of this renogram has been not analyzed. The authors report a trial to analysis in this phase by the fast Fourier transform(FFT) and power spectrum.

9mTc-DTPA renogram is corrected by 200 frames with 300 msec interval, continuously 280 frames with 3 sec interval, 480 frames in total. Thirty second from the end of initial renal blood flow spike are processed by FFT.

Results are obtained some feature power spectrum. Cyclic change was shown on the spectrum from 0.1 to 0.3Hz. In the case of renal hypertension, remarkable spectra is obtained. By these spectrum, both pre- and post renal diseases can be classified.

This results suggested that this method will be useful for physiological diagnosis of the renal diseases by early phase renogram.

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**WHOLE-BODY AUTORADIOGRAPHY OF Tc-99m-DTPA IN RATS WITH ACUTE TUBULAR NECROSIS.**

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The effect of transient renal ischemia on whole-body and renal concentration and distribution of Tc-99m-DTPA was investigated by sequential macroautoradiography of rats with acute tubular necrosis. Male Sprague-Dawley rats were divided into three groups. One served as a control, 60 minutes of warm ischemic time (WIT) in the second, and 90 minutes of WIT in the third. In 60 minutes of WIT group, the excretory process was comparatively preserved and blood level of this tracer is almost similar to control group. In this phase, the rapid distribution of renal cortex and medulla, which is considered the shunting of blood flow, was demonstrated, in early phase. While, high accumulation of cortex and renal pelvis was shown in the late phases. The pattern of sequential radioactivity of kidney showed an ascending type of curve. In 90 minutes of WIT group, demonstrated severe acute tubular necrosis showed poor excretion and comparatively high accumulation of blood. About kidney, high distribution of vascular system was shown showed poor excretion and comparatively high accumulation of blood. About kidney, high distribution of vascular system was shown, in early phase. While, although poor accumulation of cortex was demonstrated in late phases.

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**SIMULTANEOUS MEASUREMENT OF RPF AND GFR BY SINGLE INJECTION OF TWO RADIONUCLIDES.**

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Mixture of 25 μCi of 131I-Hippuran and 40 μCi of 11In-DTPA were administered via cubital vein while the patient was laid on the routine renogram facilities with 2" crystals. Four hundred ml. of water was given 30 min. previous to the test. Record taking was continued in 15 to 20 min. using 4 different PHA's. Twenty five min. after the injection patients were asked to void urine voluntarily. Urine specimen were served for measurement of percentile excretion rate of RI. RPF's and GFR's were calculated by the computer simulation based on a mathematical model of renal excretion of RI with a help of observed renogram curves and measured excretion rates. RESULTS Paperchromatographic characteristic features of these two RI's were not altered by the mixing procedures. Excretion rates of 11In-DTPA were compared to those of 131I-Na Iothalamate in 34 patients in different occasions. Results revealed a DTPA/Na Iothalamate ratio of 1.05±0.13 (Mean ± SD) which does not deny a slight tubular participation in DTPA excretion. In 6 normal subjects aged 40.5±14.8(Mean ± SD) (Range 21-67) without any history of renal /hypertensive disease, RPF were 551±25.2 (520-595), GFR 118±5.2(114-128), FF 0.215± 0.010(0.20-0.23).