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SIMULTANEOUS DUAL RADIOISOTOPE RENAL SCINTIGRAPHY. H. ISHIDA, H. MAEDA, S. SHIRAKAWA, W. KUTANI, R. FUNAKI, M. TAKEUCHI, M. SEKIMOTO, T. FUKUDA and H. AKAGI. Department of Radiology, Osaka Medical School, Takatsuki-shi, Osaka-fu.

Renal scintigraphy with simultaneous use of 3mCi of Tc-99m-DTPA and 300µCi of I-131-Hippuran was performed in 53 cases of the various renal diseases. ROI curve of the kidney (γ-camera renogram) was obtained from sequential data at intervals of 30 sec for 20 min by γ-camera and on-line computer system. It was fitted by the fifth degree polynomial approximation, and 4 parameters (Tmax, T3/4, T1/2 and Peak Count) on each curve were calculated. Each γ-camera renogram was classified into 4 types (normal, dysfunctional, obstructive and no functional type) by value of parameters, and compared with conventional Hippuran (20µCi) renogram which was classified into the same types, to assess the detectability of each renal disease. Conclusion; 1) DTPA and Hippuran renograms in the same physiological state were evaluated by simultaneous renal scintigraphy, and classification by value of parameters was obtained. 2) γ-camera renogram of DTPA (3mCi) showed the best detectability in diseases such as nephrotic syndrome, S.L.E, diabetic nephropathy and hypertension. On the other hand, γ-camera renogram of Hippuran (300µCi) showed the best detectability in nephritis. Therefore, RI study with dual isotope technique was useful on the renal parenchymal diseases.

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CLINICAL EVALUATION OF Tc-99m-dl-DMS ON 320 CASES. M. Ueda, M. MIKI, T. Machida, S. Ohishi, A. Kido, M. Yanagisawa, A. Tanaka. Department of Urology, Jikei University School of Medicine. K. Kawakami, N. Katsuvama. Department of Radiology, Jikei University School of Medicine.

Tc-99m-(meso)-dimercaptosuccinate (DMS) is most commonly used agent for renal scanning. DMS whose molecule contains two chiral carbons has chemically four stereoisomers, namely, dl-, meso-, d- and l-form. Three hundred and twenty patients (male 202, female 118) were studied with Tc-99m-dl-DMS. In all cases a dose of up to 10mCi was injected as a bolus. Renal scintiphotos were recorded on polaroid films by Nuclear Chicago Pho/Gamma HP scintillation camera.

In this studies, we could not find any clinical difference in renal imaging between Tc-99m-dl-DMS and Tc-99m-meso-DMS.

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RENAL IMAGING OF Tc-99m-DMSA IN PATIENTS ON CHRONIC DIALYSIS. Y. OHISHI, T. MACHIDA, M. MIKI, M. UEDA, A. KIDO, M. YANAGISAWA, M. IIO, H. YAMADA, K. CHIBA, H. MURATA and S. KAWAGUCHI. Department of Urology, The Jikei University School of Medicine and Department of Nuclear Medicine and Radiological Science, Tokyo Metropolitan Geriatric Hospital. Tokyo.

Renal imaging with Tc-99m-DMSA was studied in 27 patients on chronic dialysis. These cases were 5 chronic glomerulonephritis, 2 renal tuberculosis, 2 cystic kidney and 19 unknown origin renal failure. The duration of dialysis was from 2 weeks to 99 months. The renal image of 27 cases were classified in 3 types according to the degree of renal parenchymal appearance. Well documented renal image was type 1 (6 cases). Recognizable renal image was type 2 (14 cases). Hardly visible renal image was type 3 (7 cases). The relation of renal image to serum creatinine level and to daily urine volume were also investigated. Concerning the duration of dialysis, all in type 1 were cases within a year. In type 2, 11 patients were within a year but the rest within 3 years. Four out of 7 cases of type 3 had the duration of dialysis more than 2 years. In conclusion, the renal imaging with Tc-99m-DMSA in patients on chronic dialysis might be useful to detect remaining renal function. The degree of renal image classified into 3 groups showed higher correlation with the duration of dialysis than with urine volume and the level of serum creatinine.

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USEFULNESS OF SCINTIGRAPHIC TOMOGRAPHY IN CYSTIC RENAL DISEASES. H. Itoh, J. Kawamura, M. Oh, O. Yoshida, T. Fujita and K. Torizuka. Dept. of Urology, Kyoto City Hospital, Depts. of Urology and Radio-Nuclear Medicine, Kyoto University Hospital. Kyoto.

Differential diagnostic methods such as ECHO, Renal Angiography, CT and IVP Tomography are routinely applied for diseases occupying the renal space. We evaluated scintigraphic tomography in 10 cases with cystic renal diseases. The equipment for nuclear medical tomography used was Searle's PHO/CON TM Multi Plane Tomographic Scanner Model 19-72, with which scanning was made 3 hours after i.v. administration of Tc-99m DMSA 4 mCi, and longitudinal tomograms were taken at 2 cm intervals from the dorsal and abdominal sides. All of those 10 cases additionally received IVP, ECHO and Angiography so that they could be given the diagnosis on the basis of comprehensive results of examination. It was difficult to discriminate it from substantial space-occupying diseases by PHO/CON alone. PHO/CON has its practical usefulness in that it may permit one to grasp cyst in three dimensions, that is, its size, extension and depth when employed with other various methods, and also to know the absolute number of remaining renal parenchymas through calculation of DMSA Uptake Ratio. Besides, another advantageous point for this method is that it gives a very small dose of irradiation to the subject, promising a better reproducibility.