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QUANTITATIVE ANALYSIS FOR RENAL UPTAKE IN TC-99m DTPA ECT IMAGING. T.Hattori,K.Takeda, M.Maeda,T.Ito,T.Nakagawa and M.Taguchi. Mie University School of Medicine. M.akegawa and S.Matsui. Toshiba Corporation, Nasu.

Quantitative analysis of renal function was made by Tc-99m DTPA renal ECT image. An ECT system composed of opposed dual large-field-of view cameras is used in this study. A dose of about 10mCi of Tc-99m DTPA and a standard of about 1mCi were preliminary calibrated. Sequential data for ECT were collected with rotation speed of 180°/30sec. for 15min. ECT imaging of the standard was also done before or after the patient study. ECT images with 1.08cm thickness were reconstructed using convolution algorithm. Attenuation correction was done with Chang's method. Transaxial sections of image time of 1~2min. were used for uptake imaging. That is, values for the quotient of the counts over each of the matrix elements divided by the dose counts estimated from the ECT images of the standard were displayed in color. Regional mean and total renal uptake were obtained by ROI setting on these uptake images. Regional mean uptake was useful to estimate regional renal function per unit volume, which was not always proportional to the whole kidney function. Tc-99m DTPA renal ECT image is expected to be clinically useful.

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AN EVALUATION OF THE ABNORMAL ACCUMULATION IN THE LIVER ON TC-99m-DMSA RENAL SCAN. Y. HIGUCHI,T.TOGAWA,A.SUZUKI and K.KIMURA. Department of Radiology,Fukushima Medical College. Fukushima

Tc-99m-DMSA (Tc-DMSA) has been used as a renal imaging agent but the abnormal accumulation in the liver was represented in some cases. This present report was studied on the association between the abnormal accumulations in the liver and the findings of the paperchromatography (PPC) on Tc-DMSA renal scan.

The degrees of the abnormal accumulation in the liver on renal scan were classified in 4 groups ((-) - (++)).

Tc-DMSA was separated to 2 complexes (complex I:C·I, complex I:C·I), when analyzed by PPC (SG-81, Whatman) with pH 3 saline.

From the analysis by PPC, the ratio of C·I/C·I was 1.085 ± 0.402 in group (-), 2.617 ± 0.888 in (+), 5.273 ± 1.791 in (++) and 7.844 ± 3.178 in (+++).

The ratio of C·I/C·I in group (+) was significantly higher than in group (-) ($p < 0.001$).

Abnormal accumulation in the liver was not so correlated with creatinine, BUN and urinary pH levels of each case as the ratio of C·I/C·I.

Thus, from the results of PPC it was found that at least 2 complexes (C·I and C·I) were formulated in Tc-DMSA solution and the presence of C·I was correlated well with the degree of abnormal accumulation in the liver.