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CLINICAL EVALUATION OF Tc-99m-DIETHYL-IDA FOR HEPATOBILIARY STUDY. K.Senda, T.Sasaki, A.Mishima, H.Kobayashi, K.Matsubara, O.Kaii, S.Mashita, T.Ishiguchi, A.Ohno, S.Ohshika and Y.Kodama. Department of Radiology, Nagoya University School of Medicine

A new Tc-99m-labeled hepatobiliary agent Tc-99m-diethyl-acetanilidoiminodiacetate (diethyl-IDA) was examined by the basic and clinical procedures in order to evaluate its usefulness.

1) Radiochemical purity and stability of the agent were sufficiently satisfactory. 2) Cumulative urinary excretion of the agent in 24hr was estimated to be  $7.5 \pm 0.9\%$  in normal subjects. 3) Half time of the second component of the cardiac histogram was estimated to be  $24.3 \pm 3.7$  min. in normal subjects. 4) Peak time of the hepatic histogram was estimated to be  $10.3 \pm 1.3$  min. in normal subjects and significantly prolonged in patients with hyperbilirubinemia. 5) Hepatic image were able to be obtained apparently at serum levels up to  $7.4$  mg/dl and significantly even at the levels of  $15.9$  mg/dl.

Consequently the agent was evaluated to be very low in urinary excretion and somewhat high in ability of the hepatic uptake and excretion in comparison with other Tc-99m-labeled hepatobiliary agent. Then, the agent was thought to be useful not only for morphological but also for functional diagnosis of hepatobiliary diseases.

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EXPERIMENTAL AND CLINICAL STUDIES ON HEPATOBILIARY SCINTIGRAPHY AND FUNCTION TEST WITH Tc-99m-E-HIDA. I.Narabayashi, N.Otsuka, H.Terashima, T.Yokobayashi, A.Muranaka, T.Kaji, K.Nagai and Y.Ito. Kawasaki Medical School, Kurashiki.

In experimental and clinical studies, the usefulness of Tc-99m-E-HIDA (E-HIDA) has been evaluated for dynamic imaging and function test. Organ distribution of E-HIDA in rabbits at 1 hour after the administration indicated that activity was 62% of the injected dose in the gallbladder and intestine, 2% in the liver, and 9% in the kidneys and urine.

Hepatic uptake and excretion of E-HIDA were discussed in comparison with those of Tc-99m-p-butyl-IDA, Tc-99m-HIDA, Tc-99m-PI and I-123-RB.

Radiochemical purity was ascertained by thin layer chromatography in saline. Labeling was nearly 100%.

In clinical study, the imaging of liver, bile ducts, gallbladder and intestine was satisfactory with E-HIDA. Quantitative analysis of blood retention, blood clearance and hepatogram with E-HIDA reflected excretory liver function in various hepatobiliary disorders.

We concluded that E-HIDA had a lower urinary excretion and seemed more effective than the other Tc-99m-labels, such as Tc-99m-HIDA and Tc-99m-PI, at higher bilirubin levels. However, when the level of the bilirubin in blood rises above  $7.4$  mg/dl, no hepatic uptake of E-HIDA was obtained with greater renal excretion.