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EVALUATION OF THE GALL BLADDER AND THE SPHINCTER ODDI BY CHOLESCINTIGRAPHY.

T.Muraki, H.Yamada, Y.Shimohara, H.Tabuchi, M.Tanno, H.Toyama, H.Murata and K.Chiba.

Tokyo Metropolitan Geriatric Hospital, Tokyo.

Function of the gall bladder and the Oddi's sphincter was assessed by sequential hepatobiliary scan using Tc-99m EHIDA for 9 normal control, 36 hepatobiliary diseases, such as cholecystolithiasis, chr.cholecystitis, 6 chr.liver disease, and 17 malignant diseases. At fasting a normal gall bladder can accumulate most of the activity in it and after injection of cerulein, rapid intestinal excretion was observed. In biliary diseases, most of chr.liver disease, and malignant disease of abdomen the activity was rapidly excreted into the intestine with poor or nonvisualization of the gall bladder even at fasting state. Preliminary result showed potential usefulness of chole scintigraphy for the evaluation of the vesicosphincter function.

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CALIBRATION OF EXTRAHEPATIC BILIARY DUCT BY HEPATOBILIARY SCINTIGRAPHY. S.Yoshida, M.Morita, Y.Yamamoto, K.Nabeshima, T.Suematsu, S.Yoshimoto, T.Maeda. Kochi Medical School. K.Okuda, R.Otani, Kochi prefectural Hospital Kochi.

Accurate scintigraphic determination of the size of extrahepatic biliary duct on the hepatobiliary scintigraphy is difficult because of the wide variety of the activity and the imaging technique. Experimental study with phantom tubes of various size, ranging 1.5, 3, 4, 6, 9 mm, in which RI solution was flowed in and out, was performed. With using scintillation camera (GCA-401-5) and data processing system (GMS-55A), time activity curves on the ROI settled tubes were obtained. Various parameters, such as Max.count,  $T_{max}$ ,  $T_{75\%max}$ ,  $\tan\theta$ , Turnover time by Ordendorf, were evaluated. Good correlation was recognized between  $T_{75\%max}$ ,  $\tan\theta$ , Turnover time and the size of the tubes. In clinical cases, ROI was settled on the extrahepatic biliary duct and the right lobe. Turnover time on the extrahepatic biliary duct means the extent of the dilatation of duct. Not only organic dilatation but also functional dilatation could be assessed by this method. But in cases of decreased hepatocyte clearance or prolonged jaundice, this calculation method has a limitation.

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CLEARANCE AND HEPATOGRAM WITH Tc-99m-PMT. M.Yamashita, T.Miyazaki, A.Watanabe, Y.Imahori, M.Nakayama, E.Nakajima and T.Okuno. Kyoto Pref. University of Medicine. Kyoto.

We estimated the plasma clearance value with a single injection of Tc-99m-PMT (3 hours, 7 plasma samples). A rise early on the hepatogram was common among those patients and normal volunteers whose clearance values are large indicating a good liver uptake. The clearance value seemed to be inversely related to the T peak and  $T_{1/2}$ , but a few exceptions were found. The urinary excretion was thought to be effected directly by the blood retention levels of Tc-99m-PMT. From the urinary excretion data, we estimated that renal clearance was very limited compared to the total clearance value. External estimation of the clearance value by camera and computer with data accumulation for 40 minutes was not accurate enough compared to the data from blood samples. In the patients of Dubin-Johnson syndrome the hepatogram with Tc-99m-PMT showed a delayed pattern and the pattern was even more delayed with Tc-99m-diethyl-IDA. The clinical significance of the clearance value is that it can be direct estimation of the excretion of foreign matter from the liver. Additional information may be obtained in combination with imaging.

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COMPARISON BETWEEN Tc-99m PI AND Tc-99m PMT OF HEPATOBILIARY AGENTS. H.Inoue, N.Nakagi, and S.Hosoda. Internal medicine, Shiga University of Medical science. Otsu.

The hepatobiliary scintigrams with Tc-99m-PI and Tc-99m PMT were carried out in 20 patients with various liver diseases and biliary diseases. Those were diagnosed by liver biopsy, including acute hepatitis, chronic hepatitis, liver cirrhosis, and the others. The hepatobiliary scintigrams were obtained and graded, depending on quality of the images over intrahepatic bile duct, common bile duct and gallbladder. Hepatic peak time and  $T(1/2)$  from hepatogram were calculated by computer hepatogram.  $T(1/2)$  from radioactive blood clearance was obtained at the time of hepatobiliary scintigram. The results of the study were summarized as follows: 1) PMT scanning agent was transported more rapidly from hepatic cell to biliary system than PI. 2) Peak time from hepatogram and  $T(1/2)$  of blood clearance used PMT were significantly correlated with that of PI. 3) Gallbladder images used PI could be more clearly visualized comparing with PMT, however, there was reverse correlation of intrahepatic bile duct.