## EVALUATION OF Tc-99m-PYRIDOXYLIDENE ISOLEUCINE AS A HEPATOBILIARY IMAGING AGENT

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Hepatobiliary imaging has been commonly performed with I-131 labelled pharmaceuticals. Recently, Tc-99m-Pyridoxylidene isoleucine( Tc-99m-PI ) was reported as a new hepatobiliary imaging agent. This paper presents the results of clinical evaluation of Tc-99m-PI as a hepatobiliary imaging agent in one normal volunteer, 19 patients with jundice - including 9 infant patients -, and 16 patients with cholecystopathy. The study was performed using a gamma camera with a videotape play-bach system following administration of 4 mCi of Tc-99m-PI to adult patients and 1 mCi of Tc-99m-PI to infant patients intravenously by bolus injection.
As compared with Tc-99m-PI and Tc-99m-HIDA in two subjects of normal volunteer and patient with cholelithiasis, the excretion of Tc-99m-PI to the gallbladder and disappearance from the kidney was slightly faster than that of Tc-99m-HIDA. On the other hand, the uptake to the liver and the concentration to the gallbladder was similar to those of obtained by Tc-99m-HIDA. In 4 cases of the 10 adult patients with jundice showed no significant images of hepatobiliary duct for poor uptake of Tc-99m-PI to the liver. However, 1 of the 4 patients was finally confirmed a obstructive jundice. Eight cases of 9 infant patients with jundice showed no significant images of bile duct and intestine. But 3 cases of the 8 infant patients were confirmed a neonatal hepatitis by the clinical cources. Hepatobiliary imaging was also performed in 16 patients for suspected cholecystopathy using Tc-99m-PI. Tc-99m-PI imaging is useful for differential diagnosis of those cases. In addition, the caerulein injection technique was valuable for finding the contraction of the gallbladder in the Tc-99m-PI imaging.

## CLINICAL EVALUATION OF HEPATOBILIARY SCINTIGRAPHY USING $^{99m}$Tc-PYRIDOXYLIDENEISOLEUCINE

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In recent years $^{99m}$Tc-labeled hepatobiliary radiopharmaceuticals, such as $^{99m}$Tc-pyridoxylidene glutamate, $^{99m}$Tc-HIDA and $^{99m}$Tc-pyridoxylideneisoleucine ($^{99m}$Tc-PI), have been developed. In this study, using $^{99m}$Tc-PI, hepatobiliary scintigraphy was performed in 34 patients with various disorders and assessed its clinical usefulness.

Five mCi of $^{99m}$Tc-PI was injected intravenously and RI images were observed by scintillation camera. The patients were studied after 6 hr of fasting.

The images of liver, hepatic ducts, gallbladder and common bile duct were clearly visualized in patients without hepatobiliary diseases. The liver image was obtained at 5 min and biliary tract image was obtained at 10 min. In patients with severe jaundice, the image of hepatobiliary system could not be obtained. However, in patients with moderate jaundice, the image of biliary tract could be obtained. Therefore, hepatobiliary scintigraphy using $^{99m}$Tc-PI was considered to be clinically useful in the differential diagnosis of hepatocellular and obstructive jaundice, detection of site of biliary obstruction, preoperative diagnosis of congenital choledochal cyst and accurate diagnosis on radiocolloid liver scintigraphy. On the other hand, in almost all patients with gallbladder stones, the gallbladder image was not demonstrated, and so hepatobiliary scintigraphy was considered to be of little use in the detection of gallbladder stones. In a patient with Dubin-Johnson syndrome, $^{99m}$Tc-PI did not show such hepatic excretary disturbance as shown in $^{131}$I-BSP.