CLINICAL EVALUATION OF TECHNETIUM-99m PYRIDOXYLIDENE ISOLEUCINE AS A LIVER AND BILIARY IMAGING AGENT.

Masahiro Ishine, Shuji Tanada, Masashi Kawamura, Shigeru Nakata, Kosuke Ueda, Atsushi Iio, Masaji Takahashi and Ken Hamamoto
School of Medicine, Ehime University, Ehime.

In this paper, the clinical experience of the recently developed nontoxic hepatobiliary agent, ^{99m}Tc-pyridoxylideneisoleucine (PI), was reported.

Five m Ci of PI, prepared in kit form by Nihon Mediphysics were administered intravenously to 107 patients. They included 11 normal controls, 15 chronic hepatitis, 13 liver cirrhosis, 16 extrahepatic obstructive jaundice, 8 neonatal jaundice, and 44 choledochal or gallbladder disorders. Serial scintiphtos were undertaken at the speed of 1 frame for each 1 or 5 minutes for a period of 1 hour with LFOV scinticamera.

In 39 cases of them, the PI concentration in serum was determined at 5, 10 and 30 minutes after PI injection. Accumulation of PI in the liver and serum concentration of PI at 5 minutes after injection were determined. No significant differences were observed between normal controls and patients with liver and gallbladder diseases.

In three of 13 cases with hepatobiliary disorders, PI scintigraphy advantaged over contrast radiologic techniques in visualizing gallbladder. It is of great value to distinguish neonatal hepatitis from biliary atresia in neonatus with jaundice. Determinig radioactivities excreted in feces is very troublesome. Our experiences indicated that it could be possible to distinguish them by taking serial scintiphotos after injection of PI. No radioactivity appeared in the bowel in cases with biliary atresia. While some amount of radioactivity was seen in the bowel in cases with neonatal hepatitis at 1 to 5 hours after injection of PI.

It might be concluded that PI is useful agent for cholescintigraphy in complementary use with radiographic studies and for evaluating quantitatively gallbladder function and is not appropriate to estimate quantitatively liver function.

CLINICAL EVALUATION OF ^{99m}Tc-PYRIDOXYLIDEN-ISOLEUCIN (PI) ON CHOLESCINTIGRAPHY.

Kohji Higashiya, Ryo Shiraki, Yasuhiko Inamoto.
Division of Nuclear Medicine, Tsukaguchi Hospital of Hyogo Prefecture.

Using ^{99m}Tc-PI, 31 cases of cholescintigraphy were performed in our laboratory up until last July. After intravenous administration of ^{99m}Tc-PI, scintigraphies of the area of the biliary tract and the gall-bladder were obtained after 5, 10 minutes, then every 10 minutes to 60 minutes. Blood clearance times were measured, and the surface countings of radioactivities on the liver and the gall-bladder were recorded by video-tape in some cases. The patients with the following diseases were studied: cholelithiasis, cancer of the head of the pancreas, primary and metastatic liver cancers, liver cirrhosis, cholecystitis and normal controls with other diseases. In normal controls, the T½ blood clearance were only about 10 minutes, the liver were clearly visualized in 5 minutes, then, the intrahepatic bile duct and the gall-bladder were visualized within 10 minutes. The outflow into the intestine were also observed within 10 minutes. In the cases of the various liver and biliary diseases, time for visualization of the liver, biliary tract, gall-bladder and intestine were different respectively depending upon the disease and its severity. Oral cholecystographies in 21 cases, intravenous cholecystographies in 6 cases, ERCP in 3 cases, PTC in 2 cases were performed among the all cases. In comparison of the cholescintigraphies and the oral cholecystographies, non visualization by oral cholecystographies were 12 in 21 cases, but 3 cases with non visualization by oral cholecystography were visualized by cholescintigraphy. The diagnosis of biliary dyskinesia are suspected when poor contraction of the cholecystography after yolk intake with occasional complaint of discomfort of the right hypochondrium despite normal hepatic, gastric and pancreatic examinations. In three such cases, the cholescintigraphies revealed very poor outflow into the intestine even after 60 minutes. But after Ceosunin (Ceruletide diethylamine) was given, marked contraction of the gall-bladder and outflow into the intestine were observed. Conclusion: Cholescintigraphy with ^{99m}Tc-PI is one of the non invasive, useful method for functional, morphological evaluation of the all biliary system, and also the liver itself.