DYNAMIC STUDY ON ^{99m}TC-PI(PYRIDOXYLIDENEISO-LEUCINE) IN PATIENTS WITH HEPATOBILIARY DISEASE.

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Dynamic study on ^{99m}Tc-PI was performed in 150 patients with various hepatobiliary diseases. In hunger state, Tc-PI 2--5 mci was injected, and sequential image was recorded.

From the RI activity curve of the gallbladder, we divided six gallbladder types. Type I; normal filling and good contraction Type II; normal filling, poor contraction, Type III; delayed filling, good contraction Type IV; delayed filling, poor contraction Type V; poor filling, Type VI; negative image. In 14 normal cases, 9 cases(64.3%) were type I, and type IV, V and VI were nothing. However, only 2(4.5%) of 44 cases with cholelithiasis were type I and 29 cases(65.9%) were type VI. Type II and IV were 7(15.9%) and 6(13.6%). In 37 chronic hepatitis and 19 cases with liver cirrhosis were similar to normal cases. These results suggest that the visualization of the gallbladder depends on the degree of the inflammation. (First, the contraction ability and next, the filling are lost.)

Hepatogram showed that the uptake and output time (T$\frac{1}{2}$) in normal cases were 3.29 minutes and 41.5 min.. In patients with liver cirrhosis and obstructive jaundice, they exceedingly prolonged. In cases with chronic hepatitis only the output time prolonged slightly. As compared with other hepatobiliary examination, ICG and output time in hepatogram had a good comparison (r=0.759)

THE QUANTITATIVE EVALUATION OF THE DYNAMIC FUNCTION OF HEPATOBILIARY SYSTEM BY USING ^{99m}Tc-PYRIDOXYLI-DENISOLEUCINE(^{99m}Tc-PI)

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^{99m}Tc-PI,a new radiopharmaceutical for hepatobiliary imaging was evaluated.

In 68 cases with various disorders 5mCi ^{99m}Tc-PI was administered under fasting conditions.

RI activities were acquisited into GAMMA 11 computer through Ohio Nuclear 410 camera.

For 60min. data of every 30sec were stored in 64x64 matrix, and ROIs were set up on the cardiac, liver,and gall bladder region. Time activity curves were analyzed and 4 parameters were calculated as follows;λ_e-early blood clearance rate, λ_l-late blood clearance rate,λ_u-uptake rate into the liver,and λ_m-metabolic rate in the liver.

In most of normal subjects λ_m values exceeded 0.02, on the other hand, those in liver and gall bladder diseases showed lower values. λ_m values were found inversly correlated with serum alkaline phosphatase activities, and none of other serochemical parameters showed significant correlation.

High λ_e values were associated with visualization of kidneys and were considered indicative of apparent impairment of liver function.

The λ_m values, which might be the most reliable indicater of the liver function, were found to correlated significantly with λ_l (r=0.61 N=45).

To find out more practical index, blood activity rate of 5min/20min and 5min/60min were caluculated. The latter values in normal subjects were higher than 2.5 and those in diseased patients with abnormal serochemical data were less than 3.0.

Further,those 5min/60min blood rate were correlated well with λ_m values(r=0.73, N=43).

Therefore, 5min/60min ratios after ^{99m}Tc-PI appeared to be a good parameter for hepatobiliary functions.

Contractilities of gall bladder were evaluated by administration of caerulein. The RI levels at 0,3 and 10min. were compared. In normal subjects 3 and 10min. ratios were below 0.3 and 0.1,respectively while patients showing dyskinesia had values exceeding 0.8 at 10min and this parameter also appeared to be useful.

Dynamic analysis was considered to give some additional information over sequential scintiphoto.