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COOPERATIVE STUDY ON THE CLINICAL EFFICACY OF SPECT IMAGES OF THE LIVER

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Single photon emission computed tomography (SPECT) were compared in 80 patients examined to assess liver diseases. Liver scintigraphic images and SPECT images of 453 were colleced retrospectively from 9 medical institution which were located in and around Tokyo area. All cases were confirmed for its final diagnosis. In order to evaluate the results of image reading an input sheet for computer was designed to describe the confirmed diagnosis of each of 453 cases. Among 453 cases, 80 were selected and the reading were made with knowlege of patient sex and age, palpatory information and liver function tests by 13 doctors.

At the first study, the conventional liver images only were read. The second, both the conventional images and the SPECT images were read. The results of reading were recorded on the work sheet for computer input.

By comparing the record of confirmed diagnosis and the results of image reading for individual case, various programs of analysis are being undertaken.

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EVALUATION OF INFANTILE LIVER CIRRHOSIS BY DYNAMIC ANGIOSCINTIGRAM USING $^{99m}TcO_4^-$.

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Dynamic angioscintigraphic study of liver using $^{99m}TcO_4^-$ was originated for the evaluation of liver cirrhosis in children. It was examined on 50 cases of pediatric liver diseases including 26 cases of biliary atresia. After bolus injection of $^{99m}TcO_4^-$, count of RI on ROI of liver right lobe was measured by a scinticamera every one second and time activity curve was made. The curve got its peak at about 1 minutes after injection and gradually decreased thereafter. The ratio of the count of 8 minutes to the count of peak was calculated. The ratio ranged 49 to 98% according to the state of the cirrhoses of the cases. There is a significant correlation between the ration and liver fibrosis on cases with liver biopsy. Most of the cases (5/6) over 80% were associated with intestinal bleeding due to portal hypertention after liver cirrhosis, multiple examinations were performed on 6 cases that revealed the change of ratio according to the condition of liver cirrhosis of the cases. This is a simple and noninvasive method that can be easily performed on pediatric patients for evaluation and follow up of liver cirrhosis.

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THALLIUM-201 PER-RECTAL SCINTIGRAPHY FOR EVALUATING PORTAL CIRCULATION AFTER TREATMENT.

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We previously reported a new method for evaluating portal systemic circulation by Tl-201 per-rectal administration and indicated that the heart/liver uptake ratio is quite useful as an index of estimating the degrees of portal-to-systemic shunt. (J. Nucl. Med. 23:965-972, 1982). One mCi of Tl-201 chloride was given rectally and scintigram and heart/liver uptake ratio at 60 min. after administration (H/L) were investigated before and after sclerosing therapy of esophageal varices by direct injection of ethanolamine oleate under endoscopic guidance (9 patients, 13 studies) and splenic artery embolization therapy with gelatin sponge block (6 patients). The mean value of H/L was decreased from 1.22±0.21 to 0.96±0.34 in 9 studies with successful varices sclerosing therapy and marked decrease of H/L and scintigraphic change were observed in 2 studies, but there were 7 studies showing no or a little change, while in 4 studies of unsuccessful sclerosing therapy, H/L was not significantly changed. The mean value of H/L was decreased from 1.15±0.26 to 0.84±0.27 in 6 patients who underwent splenic artery embolization therapy but there was no significant correlation between H/L change rate and embolization volume of spleen.

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