We have reported a new method for evaluating portal systemic circulation by TI-201 per-rectal administration and indicated that the heart/liver uptake ratio at 20-60 min. after administration (H/L ratio) is quite useful as the index of estimating the degree of portal-to-systemic shunt. This method was employed to evaluate the change of portal-to-systemic shunt by sclerosing therapy of esophageal varices in 9 patients (11 times). The results were as follows.

1) H/L ratio (H/L) was changed after sclerotherapy of the esophageal varices.
2) The mean value of H/L was reduced in cases of effective sclerotherapy, but there were cases showing no change or little change in H/L.
3) This method revealed that portal-to-systemic shunting greatly depends on esophageal varices and changes after therapy and does not much depend on esophageal varices in cases showing no or little change in H/L.

Portal scintigraphy (P.S.) was performed on 46 patients with liver cirrhosis by a previously reported method. The collateral vein ("Cobra head sign") was observed in 18 patients (39%), four of whom had no esophageal varices revealed by X-ray and endoscopic examination. This sign was visualized in 9/12 (75%) of the patients with a prior history of hepatic encephalopathy, but in only 9/34 (26%) of the patients without this history. There was no significant correlation between heart to liver uptake ratio and the occurrence of hepatic encephalopathy. The present study indicates that the presence of "Cobra head sign" was significantly associated with hepatic encephalopathy. P.S. was found to be useful in the management of patients with liver cirrhosis.