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THE ROLE OF LIVER SCINTIGRAPHY IN DETECTING HEPATOCELLULAR CARCINOMA. K.Hayakawa, J.Okada, G.Uchiyama, S.Hayashi and T.Araki. Yamanashi University School of Medicine, Yamanashi.

Twenty six patients with hepatocellular carcinoma(HCC) were examined by radionuclide colloid(Tc-99m phytate) scan(RN) with RI-angiography(RI-AG). We assessed the relative values of RN, ultrasonography(US) and CT in imaging HCC and the role of RN was summarized as follows. 1)Some of the isoechoic and isodense lesions on US and CT were demonstrated on RI. 2)In diffuse type of HCC, RN was useful in estimating the extent of spared normal liver tissue. 3)Characteristic findings of arterial-portal(A-P) shunt were considered as follows;(a)early segmental accumulation beyond the region of focal defects on static image, (b)early appearance of central portal vein and (c) central defects in portal vein regions on static image. 4)In complicated cases with hepatic schistosomiasis, RN was more useful in detecting HCC than US.

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CLINICAL EVALUATION OF Tc-99m-PMT HEPATO-BILIARY SCINTIGRAPHY IN HEPATOCELLULAR CARCINOMA. T.Kashiwagi, M.Azuma, H.Matsuda, H.Yoshioka, H.Ishizu, N.Mitsutani, T.Koizumi, K.Takashi, Y.Kobayashi and K.Kimura. Osaka Kosei-Nenkin Hospital and Osaka University Hospital, Osaka.

It is well known that hepatobiliary imaging agents are sometimes taken up by hepatocellular carcinoma. We have assessed the diagnostic value of Tc-99m-PMT hepatobiliary scintigraphy in hepatocellular carcinoma. Twenty two patients with hepatocellular carcinoma were studied. Uptake of Tc-99m-PMT in obvious defect on a Tc-99m-phytate liver scintigram was observed in 12 out of 22 patients (54.5%). On the other hand, Ga-67-citrate scintigraphy was positive in 15 out of 21 patients (71.4%). Relationship between uptake of Tc-99m-PMT in the tumor and histologic differentiation of the tumor were studied in 13 patients and no correlation was observed. Furthermore, uptake of Tc-99m-PMT in the tumor was not related to uptake of Ga-67-citrate in the tumor and values of alpha-fetoprotein. However, uptake of Tc-99m-PMT in the tumor indicates undoubtedly hepatocellular carcinoma. Therefore, it is considered that Tc-99m-PMT hepatobiliary scintigraphy is clinically useful for specific diagnosis of hepatocellular carcinoma.

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ESTIMATION OF THE WHOLE AND REGIONAL Tc-99m-PMT CLEARANCE OF THE LIVER BY SPECT. K.Nakamura, H.maeda, T.Hirano, T.Nakagawa and N.Yamaguchi. Department of Radiology, Mie University School of Medicine.

We evaluated the whole and regional Tc-99m-PMT clearance of the liver by SPECT. The whole clearance of the liver could be obtained from the following equation.  $\text{Clearance} = \Delta U / C(t)$  (U:uptake ratio C(t): blood concentration) The liver uptake ratio of Tc-99m PMT could be got by summing up the whole liver counts of ECT-images, which were corrected by the attenuation correction of chang's method. Blood concentration was taken by the blood sampling. For the regional clearance of the liver, we made clearance images of the liver, in whose images the clearance value of each pixel is what to be divided the whole liver clearance proportionally by the each pixel counts of attenuation corrected SPECT images. We had the good correlation between clearance and blood retention. ( $r = -0.88$ ,  $P < 0.001$ ,  $n = 39$ ) so that its value could be considered reliable. There was good correlation between the whole and the regional clearance ( $r = 0.911$ ,  $P < 0.001$ ,  $n = 39$ ) but there was twice the difference in the regional clearance among the patients with the same whole clearance. We think it is necessary to take the regional clearance in order to evaluate the liver function more precisely.

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SIGNIFICANCE OF TC-99M LIVER AND GA-67 TUMOR SCANNING ON TRANSCATHETER ARTERIAL ENBOLIZATION OF HEPATOMA. I.Odano, M.Kimura, T.Tsuda, K.Watanabe, M.Takeda and K.Sakai. Niigata University, Niigata.

Both Tc-99m colloid liver scanning and Ga-67 citrate tumor scanning were undergone on six cases of hepatoma which were performed Transcatheter Arterial Embolization (TAE). Plannar and SPECT image were studied using a Siemens ZLC/75 Roter Camera system. The size of defect on liver scintigram and the accumulation of Ga-67 in the defect were compared before and after TAE. When TAE was effective, the size of defect became smaller and the accumulation of it decreased. Tc-99m liver scanning and Ga-67 tumor scanning were useful to evaluate the effectiveness of TAE.