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DETERMINATION OF HEPATITIS B VIRUS (HBV) ASSOCIATED ANTIGENS AND ANTIBODIES BY RADIOIMMUNOASSAY (RIA). T.Muro, K.Nakata, K.Kono, A.Sato, R.Furukawa, Y.Kusumoto, T.Munehisa, S.Nagasaki, N.Ishii* and T.Koji*. The First Department of Internal Medicine, Nagasaki University, School of Medicine, *Health Administration Center, Nagasaki University, Nagasaki.

Serum HBV associated antigens and antibodies from 427 pupils of Tomië-Town, Goto Island, Nagasaki prefecture, consisting of 214 male and 213 female, aged from 10 to 17 years were determined by RIA and other methods. As follows. HBs Antigen (HBsAg): RIA (Ausria II-125) and reversed passive hemagglutination (RPHA), HBs Antibody (HBsAb): RIA (Ausab) and passive hemagglutination (PHA), Hbc Antibody (Anti Hbc): RIA (Anti Hbc RIA KIT) and reversed hemagglutination inhibition (RPHI). HBsAg was positive in 6 both by RIA and RPHA, and in 1 only by RIA. HBsAb was positive in 22 both by RIA and PHA, and in 8 only by RIA. We defined that the positive anti Hbc was above 70% of % inhibition, and anti Hbc was positive in 34 both by RIA and RPHI, in 8 only by RIA and in 2 only by RPHI. Determination of HBV associated antigens and antibodies by RIA was more sensitive compared with other methods. It would be suitable that the positive anti Hbc was estimated above 60% of % inhibition by RIA, because almost all negative cases of anti Hbc by RPHI showed under 60% of % inhibition by RIA.

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SERUM FERRITIN CONCENTRATION IN VARIOUS HEPATIC DISEASES. T.Suzuki, K.Kokubun, T.Igarashi, T.Higuchi, M.Umino, T.Tanaka*, S.Matsuda, T.Uchida, S.Kariyone. The First Department of Internal Medicine, Fukushima Medical College. *Saiseikai Hospital, Fukushima.

Serum ferritin concentration, liver ferritin iron and total liver iron content were evaluated in hepatoma and in various hepatic diseases.

Serum ferritin concentration was markedly higher in acute hepatitis and hepatoma, and slightly higher in chronic hepatitis and liver cirrhosis. During clinical course in one case of acute hepatitis, serum ferritin was parallel to GOT and GPT changes. The same phenomena were observed in one case in hepatoma, however, serum ferritin showed high level and GOT, GPT within normal range before death. There was no difference between total iron content per gram of liver in normal hepatocytes and in hepatocytes without infiltration of hepatoma cells, but that in area with hepatoma revealed lower value, although total liver iron mass was higher in hepatoma than in normal control. Liver ferritin concentration per gram liver in hepatoma cells also showed lower level than that in normal hepatocytes or hepatocytes without infiltration on cases with hepatoma.

These findings suggest that ferritin concentration of tumor tissue itself might not increase and higher serum ferritin concentration in hepatoma might be due to acidic tumor ferritin.

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EVALUATION OF "PORTAL SCINTIGRAPHY" BY INTESTINAL ADMINISTRATION OF Tc-99m USING ENDOSCOPY IN LIVER CIRRHOSIS. M.Kudo, Y.Ibuki, K.Fujimi, S.Tomita, H.Komori, Y.Okimoto, A.Todo, Y.Kitaura, H.Tochio, Y.Saiki, H.Ito, Y.Morimoto, K.Ikekubo, T.Mukai* and K.Torizuka*. Kobe General Hospital, Kobe. *Kyoto University School of Medicine, Kyoto.

The purpose of this study was to evaluate "Portal scintigraphy (PS)" in liver cirrhosis (LC).

"PS" was performed in 36 patients with LC by intestinal administration of Tc-99m (10mCi) using endoscopy. We used endoscopy in order to put RI into the intestine accurately and to avoid physiological shunts in the rectum. We obtained time-activity curve upto 20 min and heart/liver uptake ratio (H/L ratio) at 4 min after administration. We classified the curves into 3 types. We investigated the relationship between H/L ratio and liver and spleen volume in each type. These volumes were obtained by utilizing SPECT.

The results were as follows: (A) In the type of preceding liver uptake but finally dominant heart uptake, we found negative correlation of H/L ratio with liver volume ($r=-0.64$) and positive correlation of H/L ratio with spleen volume ($r=0.61$). (B) H/L ratio in moderate esophageal varices showed higher value than that in mild varices.

In conclusion, "PS" is an excellent method to analyze the various pathological states of liver cirrhosis from the viewpoint of portal circulation.

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PER-RECTAL PORTAL SCINTIGRAPHY WITH ^{99m}Tc -RBC IN LIVER CIRRHOSIS- DETECTION OF VARIX AND $^{99m}\text{TcO}_4^-$ FROM RECTUM ABSORPTION RATE - . M.Shiomi, C.Kameda, S.Itoh. 3rd Dep. Internal Med. K.Suzuki, M.Mashimo, K.Nishimura and T.Miyamae. Radiology Saitama Medical School

Per-rectal portal scintigraphy is clinically useful method for evaluation of portal circulation. The per-rectal portal scintigraphy was performed by using in vivo labeled Tc-99m red blood cell. Previously we reported about the appearance time of liver and heart and about the ratio of the liver to heart in early slope of time activity curve in liver cirrhosis by per-rectal portal scintigraphy. This report is concerned with the detection of varix and absorption rate $T_{1/2}$ of $^{99m}\text{TcO}_4^-$ by portal scintigraphy. In patients with liver cirrhosis. The varix of coronary vein, splenic vein and umbilical vein was recognized as a highly accumulated spot in portal scintigraphy. These spot were found to be varices by contrast angiography. $T_{1/2}$ of the heart area, which presumably reflects absorption rate of $^{99m}\text{TcO}_4^-$ through the rectum, is taken by time activity curve. The mean level \pm s.d. of $T_{1/2}$ was 230 ± 109 sec in controls, 340 ± 119 sec in chronic active hepatitis and 540 ± 210 sec in liver cirrhosis. $T_{1/2}$ of the heart area in liver cirrhosis was remarkably longer than others.