SEPARATE EVALUATION OF EFFECTIVE LIVER BLOOD FLOW AND LIVER FUNCTION BY THE USE OF 131I-LIPIODOL(LP) ON VX2 CARCINOMA IN RABBITS.

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The investigation was carried out on 11 white adult rabbits, each weighing 2.0 - 2.5 Kg. VX2 carcinoma was transplanted into subcapsular region of the liver. Tumor become visible about 2 cm in diameter after the inoculation on 2 weeks. 131I LP was administered slowly through cecal artery to a total of 11 rabbits grouped into three as follows. Group A: 5 ml of normal saline; Group B: 131I LP 0.4 - 0.8 ml; Group C 131I LP 2.0 - 4.0 mCi (0.4 - 0.8 ml of LP). Change in tumor size was observed after treatment, comparison of tumor size treated with 131I LP was made. At 14 day after injection, the liver was taken out, soft X ray was taken and after decay of 131I, histological examination was performed. In group C, tumor become soft and decrease in size, and histological examination made using hematoxylin and eosin stain showed complete necrosis in hepatic tumor of those 5 rabbits except for small part of central arterial region. Those results obtained in our study, revealed to be effective approach to selected cancer therapy.

EVALUATION OF ASIALOGLYCOPROTEIN RECEPTOR-BINDING, SYNTHETIC RADIO-LABBED GLYCOPROTEIN IN ESTIMATING HEPATIC FUNCTIONAL RESERVE.

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Asialoglycoprotein receptor (ASGPR) resides at the cell surface of hepatocytes, where it recognizes and binds galactose-terminated glycoproteins. Tc-99m-Galactosyl-Neoglycoalbumin (Tc-99m-NGA) is a newly developed analog ligand of galactose-terminated glycoprotein. We evaluated clinical utility of Tc-99m-NGA in estimating hepatic functional reserve in 23 clinical cases.

NGA Receptor Index, which is given by the radioactivity of the liver divided by that of the liver plus heart at 30 min after intravenous injection of Tc-99m-NGA, was decided to be a preliminary index of liver function provided by NGA studies in this report. A positive correlation was observed between NGA Receptor Index and Cholinesterase, Hepaplastin test, Thrombotest, Prothrombin time and K-ICG clearance. A negative correlation was observed between NGA Receptor Index and ICG R15 and Child-Turcotte Criteria Score.

Analysis of the NGA dynamic curve is a promising method for the estimation of the hepatic functional reserve, as the dynamic curves correlate to the Asialoglycoprotein receptor concentration.

TREATMENT OF HEPATOCELLULAR CARCINOMA BY HEPATIC ARTERIAL INFUSION OF 131I-LABELED LIPIODOL.

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Lipiodol has been employed to detect hepatocellular carcinoma (HCC) since it remains selectively in the hypervascular area of HCC. I-131-labeled lipiodol was infused through the hepatic artery as a new treatment for HCC. Thirteen cases, with 5 solitary tumors, 8 with multiple tumors, were treated with this therapy. An adequate dose of I-131-lipiodol, 5-30mCi, was infused through the hepatic artery to acquire 70 Gy for tumor tissue. The patients were followed by CT scans, US, serum levels of AFP. The decrease in tumor sizes was found in all cases, the diameter of tumors decreased to less than 30% in many tumors, and serum AFP levels also decreased remarkably. The case with solitary tumor was operated later and histological examination of the tumor showed complete necrosis. Since lipiodol was selectively accumulated around HCC, side effects of radiation was negligible. This method is very useful in the treatment of HCC especially when applied to the patients who are unable to receive operation or transcatheter arterial embolization.