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POSITIVE DELINEATION OF HEPATOCELLULAR CARCINOMA WITH I-131-LABELLED LIPIODOL ULTRA FLUID ADMINISTERED THROUGH HEPATIC ARTERY. Yasuhiro Yumoto, K. Jinno, K. Tokuyama, T. Fujita, Y. Araki, T. Ishimitsu. Shikoyu Cancer Center Hospital, Inatsuki S., K. Hamamoto, and A. Iio. Department of Radiology, Ehime University Medical school, Japan

Subjects were comprized with 6 cases of hepatocellular carcinoma (HCC) with liver cirrhosis which were confirmed histologically. One or two mCi of I-131-lipiodol was infused through the hepatic artery. The patient's thyroid were blocked with Lugol's solution previously. Serial determination of the radioactivity in blood samples and scintillation probe measurements of the liver and tumor counts rates were performed. Xray computerized axial tomographic scan of the liver obtained about one week prior to the infusion of I-131-lipiodol were utilized in computation of the size of the liver and tumor (HCC).

Mean value of the effective half life of the tumor in patient without TAE was 5.2 days. In contrast, that in patients with TAE was 6.2 days. Tumor dose ranged from 310 to 2724 rads, and liver dose was rads. In a cases with 4 peases of HCC less than 2 cm in diameter, I-131-lipiodol was able to delineate positive images by scintillation camera. Scintiphoto with I-131-lipiodil revealed slight accumulation of isotope into the lung, in addition to positive tumor images in patients with huge HCC in whom, celiac angiography showed the existence of arterio-venous shunt.

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C-13-BREATH TESTS FOR MONITORING DRUG METABOLIZING CAPACITY. M. SUEHIRO, K. MATSUMOTO, H. WATANABE and M. IIO. Tokyo Metropolitan Geriatric Hospital, U. of Tokyo, Eiken Immunochemical Laboratory, Tokyo.

By means of C-13 breath tests, drug metabolizing capacity in normal subjects as well as patients with and without liver diseases are assessed. As substrates, C-13-aminopyrine and C-13-methacetin were used. Following oral administration of the labeled substrates, breath was collected at 10-15 minutes intervals for 3 hours. C-13-CO<sub>2</sub> in breath was analyzed by mass spectrometry.

C-13 aminopyrine metabolizing capacity reflected the degree of impairment that the damaged livers suffer. Furthermore, the sensitivity to predict the decrease in liver function was found to be higher than the conventional liver tests. However, 30-40 % of the normal caeses showed "abnormal" C-13-CO<sub>2</sub> excretion patterns, of which characteristics are low peak height, delayed disappearance rate etc., which suggests that 30-40 % of the Japanese population might be "sensitive" to the drug. Results of C-13-methacetin tests correlated well ( $r=0.957$ ) with those by C-13-aminopyrine. And in contrast to the aminopyrine metabolism, normal subjects showed high metabolic and disappearance rates. Therefore, various parameters could be used for data analysis.

These tests would become important, since there are no means to detect drug metabolizing capacity of the patients under medical care.

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THE MEASUREMENT OF <sup>13</sup>C-COMPOUNDS IN THE EXPIRED AIR, THE BILE AND THE SERUM USING INFRARED ANALYZER. T. Suzuki, H. Ohara, S. Takahashi, S. Tachibana and K. Someya. St. Marianna Univ. School of Medicine. Kawasaki Y. Sasaki. Toho Univ. School of Medicine

The breath test, C-labeled glycine cholate is usefull to clinical diagnosis of some malabsorbtion syndromes. We have reported the fundamental examinations of the breath test using glycine-1-<sup>13</sup>C-cholate and the infrared analyzer. In this report, the metabolisms of the glycine and glycine-cholate was investigated to measurement of <sup>13</sup>C-compounds of the expired air, the bile and the serum in the rats. The improvement point were the thermal stabilization of the analyzer and the detedtor in added to the improvement of the data processor. The measurements of the <sup>13</sup>C-compounds in the bile and serum were performed by the flamed method. The <sup>13</sup>CO<sub>2</sub> in expired air after administrated of <sup>13</sup>C-glycine had a peak 30 min. after and decreased immediately and simulaneniously <sup>13</sup>C-compound curve in the bile had a peak and immediate reduction. In the bile after administrated <sup>13</sup>C-glycine cholate had a peak and immediate reduction but <sup>13</sup>CO<sub>2</sub> in the expired air was under detectable sensitivity. The <sup>13</sup>C-compounds measurement using infrared analyzer connected to flamed method is utility in examination of C-labeled compounds in entero hepatic circulated substances.

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CLINICAL EVALUATION OF THYROXINE-BINDING GLOBULIN AS A MONITOR OF THE THERAPEUTIC EFFECTS FOR THE POST-OPERATIVE PATIENTS WITH LIVER METASTASIS. S. TERUI AND H. OYAMADA. NATIONAL CANCER CENTER HOSPITAL. TOKYO.

This investigation was undertaken to evaluate thyroxine-binding globulin (TBG) as a monitor of the therapeutic effects for the post-operative patients with liver metastasis. Six patients (5 with breast cancer and 1 with colorectal one) received an arterial chemotherapy and 4 patients (3 with colorectal cancer and 1 with thyroid one) were resected liver tumors surgically. All patients showed a significantly higher TBG concentrations than normal before treatment. According to the therapeutic effects, TBG was decreased to the normal level in 4 patients during the chemotherapy and also the defects on the liver scintigram were becoming to small or disappeared. For the patients treated surgically, TBG returned to normal in one patient. In this respect, TBG is a fairly reliable, non-specific tumor marker to monitor the therapeutic effects in the case of liver metastasis. Why TBG increases to such proportions in spite of the euthyroid state remains unexplained. In our view, TBG increase may be related to the abnormal estrogen metabolism in damaged liver cells; in may be that it is dependent on the very degree of liver cell damage induced by the liver tumors.