

- 1193 PERIPHERAL CHOLANGIOCARCINOMA: DETECTION BY SONOGRAPHY AND COMPARISON WITH HEPATOCELLULAR CARCINOMA. A. Colli, M. Coccio, L. Cesarini. Divisione di Medicina Ospedale di Morbegno Az. S. S. 9 Sondrio Italy

**BACKGROUND AND AIM.** Sonography (US) is accurate in the detection of primary hepatic tumors, of which peripheral cholangiocarcinoma represents about 10%. US findings in peripheral cholangiocarcinoma are lacking.

**SUBJECTS AND METHODS.** US, clinical and laboratory findings of 10 consecutive patients with histologically proven peripheral cholangiocarcinoma were reviewed and compared with those in 26 patients with hepatocellular carcinoma detected in the same period.

**RESULTS.** In all patients with peripheral cholangiocarcinoma sonography disclosed multiple hepatic nodules with hypoechoic or target pattern. Two showed dilated intrahepatic bile duct, two hilar adenopathy, none portal infiltration. In 8/10 US guided fine cutting needle biopsy was diagnostic, in two repeated biopsy with larger needle was needed. In 16/26 patients with hepatocellular carcinoma US disclosed a simple nodule, with diameter < 5 cm in five. Ten showed a multinodular target pattern, three hilar adenopathy, 16 portal infiltration and 11 ascites. In all US guided fine cutting needle biopsy was diagnostic. In both groups clinical symptoms and laboratory abnormalities were mild. All patients with hepatocellular carcinoma had cirrhosis and 14 were anti HCV positive while only one patient with peripheral cholangiocarcinoma had cirrhosis and was anti HCV positive.

**CONCLUSIONS.** In this series peripheral cholangiocarcinoma represented a significant fraction of all primary liver cancers. Due to aspecific symptoms only intractable and far advanced cases were detected. US findings did not differ from those seen in metastases from extrahepatic adenocarcinoma or in hepatocellular carcinoma with multinodular pattern. US guided fine cutting needle biopsy yielded diagnostic material and allowed the definitive differential diagnosis.

- 1194 ALTERED ASIALOGLYCOPROTEIN RECEPTOR DENSITY IN LIVERS OF PORTACAVAL-SHUNTED RATS DETECTED BY QUANTITATIVE FUNCTIONAL IMAGING. SD Colquhoun, DR Vera\*, CA Connelly, DP Hutak\* and RC Stadnik\*. Transplant Division, Dept. of Surgery and Nuclear Medicine Division, Dept. of Radiology\*, University of California, Davis.

Quantitative imaging studies of asialoglycoprotein receptor (ASGP-R) binding in patients with liver disease suggest that impaired liver function is associated with decreased concentrations of ASGP-R on plasma membranes of the liver (Pimstone et al., *Hepatology* 20: 917-23, 1994). Rats with portacaval shunts are a suitable model for inducing consistent, subtle damage to the liver. This study was conducted to determine if ASGP-R density is altered in these rats.

Six Sprague-Dawley rats with end-to-side portacaval shunts and six sham-operated rats were anesthetized with chloral hydrate. Tc-99m-Galactosyl-neoglycoalbumin (Galactoscint, 3.2 nmol/kg; Nihon-Mediphsys, Japan) was injected into a catheter in the femoral vein. A 20 minute dynamic imaging study was acquired with visualization of the entire animal. A pharmacokinetic model was used to estimate ASGP-R density and hepatic plasma flow (Vera et al., *J. Nuc. Med.* 31:1169, 1991).

The mean ASGP-R density in the portacaval-shunted rats ( $0.082 \pm 0.066$  nmol receptor/gram liver) was significantly decreased ( $p = 0.012$ ) compared to the sham-operated control group ( $0.254 \pm 0.119$  nmol/g). Hepatic plasma flow, alkaline phosphatase, ALT and AST levels were not significantly different ( $p > 0.05$ ) in the two groups. Blood ammonia and bilirubin levels were significantly elevated ( $p < 0.05$ ) in the shunted rats. Blood glucose was significantly decreased. Animal and liver weights were significantly decreased ( $p < 0.05$ ).

These results support the hypothesis that ASGP-R density is associated with changes in the liver which affect its function. Quantitative imaging of ASGP-R binding may provide a sensitive clinical parameter for evaluation of liver disease, complementing the data provided by liver function tests. Supported in part by PHS Grant R01 AM34706.

- 1195 THROMBECTOMY AND INTRA-OPERATIVE THROMBOLYSIS WITH STREPTOKINASE FOR HEPATIC ARTERY THROMBOSIS FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION. J. Contis, T. Bocchini, D. Aridge, L. Lindsey, P. Garvin, M.D. and H. Solomon. Dept. of Surgery, University of St. Louis School of Medicine, St. Louis, MO

**Background:** Hepatic artery thrombosis (HAT) is a continuing cause of graft loss and of significant morbidity and mortality. We report our experience on revascularization for early HAT and conservative treatment of delayed HAT that has significantly decreased the re-transplantation rate in our institution.

**Material:** Between May 1991-1995, we performed 95 orthotopic liver transplants (OLT) on 88 adult patients (pts). 8 pts developed early HAT (one pt twice) within the first two weeks and 3 pts late HAT (3-16 months) posttransplant. In 4/8 pts HAT was associated with a rejection episode. All pts routinely have a Duplex ultrasonography on POD#1 and whenever clinically indicated thereafter. Failure to detect intrahepatic arterial flow resulted in immediate re-exploration and/or hepatic arteriography. In the first three pts a thrombectomy was not attempted and the pts were re-transplanted. One pt underwent intra-arterial continuous thrombolysis with urokinase that failed. 5/8 pts underwent urgent re-exploration with thrombectomy of the hepatic artery and intra-operative thrombolysis with 250,000 U of streptokinase. All pts were fully anticoagulated during the procedure and postoperatively. 3 pts who presented with liver abscess and cholangitis had delayed HAT confirmed with angiography and were treated with antibiotics and percutaneous drainage.

**Results:** All five patients who underwent thrombectomy and intraoperative thrombolysis are alive. Three of them re-developed HAT. One was successfully re-thrombectomized, one was re-transplanted and one developed a delayed HAT, cholangitis and liver abscess. She was successfully treated with antibiotics, percutaneous drainage and biliary stents. One pt developed biliary strictures and liver abscess with stricture of his arterial anastomosis. He was treated with balloon angioplasty, percutaneous drainage and biliary stent. The other two pts with delayed HAT were also successfully treated with antibiotics and percutaneous drainage. Overall, 4 grafts were lost to HAT (only one in the thrombectomy/thrombolysis group) and two pts died. The graft rescue rate following urgent revascularization was high (80%). All pts with delayed HAT were successfully treated (100%) without the need for re-transplantation.

**Conclusions:** In our experience, urgent thrombectomy with intraoperative thrombolysis with streptokinase was extremely successful in salvaging the allografts. Conservative treatment of the biliary complications following delayed HAT has further decreased the need for re-transplantation.

- 1196 Hepatic Changes in Workers From a Petrochemical Plant in Salvador, Bahia-Brazil. Cotrim HP; Freitas LAR; Parana R; Moreno L; Portugal M; Lyra LG; Andrade ZA. Gastro-Hepatology Service(Federal University of Bahia)and Fiocruz-Bahia, Salvador,Bahia - Brazil

A peculiar syndrome affecting workers exposed to several volatile chemical substances in a large petrochemical installation near the city of Salvador, Bahia, Brazil has been observed in 67 subjects. They were asymptomatic people who during routine periodical examination revealed AST, ALT and GGT elevation in the serum. Except one all were males, and their ages varied from 27 to 57 years, with an average of 37 year. They had their present occupation for at least 5 years. Some of them were overweighted or had history consistent with mild alcohol consumption, while others revealed positive serology for HBsAg and antiHCV. However, a core of six patients in whom all known causes of hepatic aggression had been excluded, were selected for special studies and are here presented. The levels for AST varied from 1.5 to 5.0 times normal values. For ALT this variation was from 1.5 to 7.0 and for GGT 1.5 to 10.0 times. Needle liver biopsies were performed in all six. At the optical microscopic level the changes observed did not disturb the normal acinar arrangement of the liver. Changes consisted of focal macro and microsteatosis without a particular distribution within the acini. The hepatocytes near the terminal veins presented impregnation by bile and the presence of a yellowish pigment, probably lipofuscin, as well as cytoplasmic swelling and mild signs of cholestasis and cholestasis. Rarely lytic necrosis of isolated or collections of hepatocytes were detected at the acinar zone III. Inflammation was mild, represented by focal intrasinusoidal or portal accumulations of mononuclear cells. At the electron microscope signs of chronic liver cell damage were evident and affected mainly the mitochondria and the biliary pole of the hepatocytes. Mitochondria exhibited abnormal forms and sizes, with frequent cristolysis. Phagolysosomes were abundant and contained residual bodies of various shapes. No hyperplasia of the smooth reticulum or cito-skeleton change were observed. Activation of Ito cells with increased deposition of collagen fibrils in perisinusoidal space was a frequent finding. Present findings indicate a chronic liver damage probably produced by toxic substances. Efforts are being made to identify them.