ANNUAL MEETING OF THE MEXICAN ASSOCIATION OF HEPATOLOGY


A. TRANSPLANT/LIVER SURGERY

001
INCREASED NASH INDICATION FOR LIVER TRANSPLANTATION IN RECENT YEARS RETROSPECTIVE ANALYSIS

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Introduction. Fatty liver disease affects 17-33% of the general population in Western countries, while non-alcoholic steatohepatitis (NASH) occurs in 6-17% and is directly related to obesity. In patients with NASH, the risk of developing cirrhosis is estimated to be up to 25%. Moreover, according to recent statistics, worldwide Mexico ranks second in adult obesity and first in childhood. Thus, an increase in candidates for liver transplantation owing to NASH is to be expected. Material and methods. We reviewed all transplants performed by our group from June 1999 to January 2013. The population was divided into two periods: 1999-2007 and 2008-2013. Indications for transplantation were compared using chi-squared. Kaplan Meyer curves were used for differences in survival according to the indication. Results. We analyzed 62 liver transplants in 61 patients. There were 39 (63%) transplants during the first period and 23 (37%) in the second. Globally, indications for liver transplant were as follows: HCV 19 (30.6%), OH 19 (30.6%), NASH 6 (9.7%), autoimmune hepatitis 6 (9.7%), others 12 (19.4%). When comparing the two study groups, the following differences were found: HCV 14 (36%) vs. 5 (22%), p = 0.271; OH 10 (25%) vs. 9 (39%), p = 0.393; NASH 1 (3%) vs. 5 (22%), p = 0.623; other 14 (36%) vs. 4 (17%), p = 0.154. Survival rates at 1 and 5 years were 84 and 70%, respectively, with a mean follow up of 59 months. There was no significant difference in survival according to the indication for transplant (log-rank-test 0.919). Conclusions. Cirrhosis caused by NASH has increased in recent years as an indication for liver transplantation. No differences in survival of these patients were found when compared with other indications. The authors declare that there is no conflict of interest.

002
TRANS-JUGULAR PORTOSYSTEMIC SHUNT (TIPS) FOR PATIENTS IN WAITING LIST FOR LIVER TRANSPLANTATION: SINGLE TRANSPLANT

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Introduction. Trans-jugular portosystemic shunt (TIPS) was introduced in 1988 as an alternative treatment of variceal bleeding due to portal hypertension. Since then, many studies supporting its usefulness, especially after failure of endoscopic and pharmacological interventions, and it has been proposed as a useful option in treating refractory ascites and hydrothorax. Objective. To describe our experience and analyze the outcome of patients in the waiting list (WL) for liver transplantation (LT) who underwent TIPS. Demographic variables, pre-LT indications, surgical technique, use of blood in OR, vascular complications, renal dysfunction and LT post-operative mortality were analyzed. Material and methods. We retrospectively reviewed prospectively collected data of patients undergoing LT in our program. Results. 67 patients were included in the WL, 61 were transplanted and 6 died before transplant due to complications. TIPS was placed in 4 patients (5%), two women (50%) with a mean age of 52 years (46-60 years), etiology of cirrhosis was: PBC 1 (25%), NASH 2 (50%) and alcohol intake 1 (25%). Indications for TIPS were variceal hemorrhage 1 (25%), hepatic hydrothorax 2 (50%), refractory ascites 1 (25%). One patient with TIPS on WL died of sepsis, while 3 patients were transplanted and are still alive at 15, 8 and 4 months after surgery. There were no differences in the surgical technique, vascular complications, intraoperative blood consumption, renal dysfunction or operative mortality when compared with the rest of the evaluated patients. Conclusion. TIPS in patients on WL for LT is a safe procedure, which in our experience does not increase technical difficulty in surgery nor does it increase complications or operative mortality. The authors declare that there is no conflict of interest.
Introduction. Liver metastasis from colorectal cancer is one of the most common causes of death in this group of patients. Their median survival rate without treatment is 6 to 12 months. The incidence of liver metastases (mets) goes from 50-60%; 25% of them presented at the diagnosis of colorectal cancer. The complete resection of the metastases (R0) is the only treatment with possibility of cure in selected patients. Unfortunately only less than 25% can be resected. The techniques of ablative with radiofrequency and cryotherapy have proved utility to raise the possibility of resection for multiple lesions. They are usually used as a complement for surgical treatment. Objective. To report a case with multidisciplinary management of liver metastasis in a patient with colorectal cancer. Case. 51-year-old male patient with diagnosis of right colon adenocarcinoma and 11 liver metastases. The colonoscopy reported a sessile tumor 5 x 3 cm without luminal obstruction, the TAC demonstrated bilobar lesions that ranged from 2-7 cm. The Pet-Scan didn’t show any other site of disease. The patient took one cycle of chemotherapy with Folfox, and a second one with Avastin. The patient had good response to treatment. He was evaluated for resection with an Hepatic Volume that reported 34% of residual volume. It was performed a right hemicolectomy with an ileo-transverse anastomosis + left hepatectomy + local resection of a lesion in the V segment + radiofrequency of lesions in segment VI and VIII. After surgery, the patient had an adyuvant cycle of chemotherapy. 10 months after the procedure the patient has no evidence of disease. Disclosure. The current criteria for resection of mets are achievement of free margins (R0), preservation of at least two contiguous segments with vascular and biliary flow, and at least 20% of residual healthy parenchyma. The combination of surgery + ablative therapies increases the possibility of resecting all metastatic lesions leaving enough viable tissue. Our case is an example of multidisciplinary management for multiple liver mets. The authors declare that there is no conflict of interest.

Table 1. Changes in biochemical parameters with MARS therapy.

<table>
<thead>
<tr>
<th>Biochemical parameters</th>
<th>Pre MARS</th>
<th>1st session</th>
<th>2nd session</th>
<th>3rd session</th>
<th>MARS post (100 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total bilirubin (mg/dL)</td>
<td>35.15</td>
<td>23.09</td>
<td>20.10</td>
<td>18.65</td>
<td>1.8</td>
</tr>
<tr>
<td>Ammonia (mg/dL)</td>
<td>134.7</td>
<td>23.1</td>
<td>50.4</td>
<td>65.3</td>
<td>30</td>
</tr>
</tbody>
</table>

004

**TREATMENT OF FULMINANT HEPATIC FAILURE (FHF) WITH MARS (MOLECULAR ADSORBENT RECIRCULATING SYSTEM). PEDIATRIC CASE REPORT**

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Introduction and aim. Currently, liver transplantation is the preferred treatment for FHF; however, the shortage of cadaveric donors has forced the use of replacement treatments of liver function such as MARS, procedure used as a bridge to transplantation. The aim of this work is to present a case of a pediatric patient with FHF successfully treated with MARS. Case report. Male patient, 11 years old, previously healthy, who entered with condition 25 days of evolution characterized by malaise, dark urine, jaundice and acolic; adding significant abdominal pain during the last 24 h. Was ruled out infectious, autoimmune and metabolic etiology, there was no history of drug intake. On admission, neurological impairment merited ventilation assistance and management in intensive care for eight days. Treatment consisted of administration of fresh frozen plasma, vitamin K, ursodeoxycholic acid (UDCA) and antiammonia measures. Therapy was performed with MARS on 3 occasions and ended the waiting list for liver transplantation. Evolved with normalization of his consciousness, improvement of liver function tests and clotting times (Table 1). Was discharged home with omeprazole, spiranolactone, UDCA, sodium benzoate, lactulose and neomycin without requiring liver transplantation. At 100 days after discharge, he is without clinical jaundice, receiving only UDCA. Conclusions. Decreasing ammonium and bilirubin levels, probably was determined by applying the MARS system, so it may be useful in pediatric patients with FHF. Studies remain to be conducted in children and determine the precise point during the course of the FHF to initiate this hepatic replacement therapy and evaluating its therapeutic action in relation to mortality. The authors declare that there is no conflict of interest.
was ESLD = 7 ± 1 y CT = 1 ± 0.50 (p = 0.002). Col-1 expression (pg/mL) was ESLD = 15 ± 8 and CT = 8± 1 pg/mL (NS) and Col-III (pg/mL) was ESLD = 35 ± 2 and CT = 2 ± 1 pg/mL (0.002). In liver tissue of liver transplant recipients, the gene expression of proinflammatory cytokines and chemokines was increased, with higher transcriptional activity of CXCL8. Also the expression of genes related to the fibrogenic process is 7 times in the terminal stage of liver disease, regardless of etiology and patient age.

The authors declare that there is no conflict of interest.

**CASE REPORT: BILIO-PLEURAL FISTULA AFTER HEPATIC TRANSPLANT**

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**Discourse.** Biliary complications are still one of the main causes for morbidity despite the surgical advances on technique and graft preservation. A bila or bilo-peritoneum is the most common presentation for a biliary leak. This report refers to an extraordinary presentation of biliary complications that could be related to the patient’s history of thoracic ascites. The multidisciplinary management, with the use of endoscopic techniques and interventionalist radiology allows resolution for most of these complications without conditioning the lost of the graft or the patient. The authors declare that there is no conflict of interest.

**Introduction.** A bilio-pleural fistula is an atypical presentation of biliary complications after hepatic transplant with complete graft, with higher incidence between living donor transplantation. They have been described more frequently as a complication for non-transplant related invasive radiologic procedures not-related with liver transplant. The global incidence of biliary complications after hepatic transplant ranges from 10-36%, from which biliary leaks represent 8%. The percentage of biliary complications in our center is about 16%. Half of them are biliary fistulas related to use of T tube.

**Objective.** To report an atypical presentation of a biliary fistula.

**Case report.** 44-year-old male patient with history of orthotopic hepatic transplant for cirrhosis secondary to NASH. Complicated with refractory ascites, hydrothorax and recurrent spontaneous bacterial peritonitis. The patient was treated with TIPS in the pre-transplant period. The procedure was realized with a cadaveric graft, ABO identical with 9 h of cold ischemia. The biliary reconstruction was made with a choledoco-choledocostomy with an absorbable monofilament, without a T tube placement. The patient presented good evolution and was discharged 10 days after surgery with immunosuppression based on tacrolimus, MF and prednisone. The patient came back 21 days later with abdominal pain, hyperbilirubinemia and right pleural effusion. An US guided thoracentesis was made and drained 3,400 mL of biliary fluid. The patient had a biliary scintigraphy that localized the leak on the site of the anastomosis. An ERCP was made confirming the diagnosis and was resolved with a stent colocation. The patient was discharged 5 days later, asymptomatic with normal liver function tests.

The authors declare that there is no conflict of interest.

**SUCCESSFUL IMMunosuppression SiroliMUS IN LONG TERM LIVER TRANSPLANTATION. A ONE CENTER EXPERIENCE**

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**Introduction.** Sirolimus (SIR) offers potential advantages over immunosuppression (IS) based on calcineurin inhibitors, preserves renal function, has antiproliferative and antiviral properties.

**Objectives.** Evaluate efficacy and safety of SIR as an immunosuppressant in patients (px) with orthotopic liver transplantation (OLT).

**Material and methods.** A retrospective study with 38 px postOLT converted from tacrolimus to SIR in the last five years.

**Results.** Etiologies: HCV (9), OH (8), HAI (6), NASH (3), HCV + HCC (3) and others (9). SIR Main indications: renal dysfunction, neuropsychiatric symptoms and rejection. Pre-conversion glomerular filtration rate (preC) 52 ± 26 vs. 74 ± 2 mL/min postconversion (postC) (P < 0.012). 2 px with microalbuminuria (µalb) preC: one progress to albuminuria (µalb) postC mild (500 mg/dL), the other remained at µalb and developed diabetes mellitus (DM) postC.

**Discussion.** 7 px developed proteinuria postC: 3px µalb (30-180 mg/dL) without DM, 1 µalb 100 mg/dL, DM postC, 1 mild µalb 398 mg/dL, DM postC. 1 µalb 30 mg/dL, DM postC development; 1 µalb severe 1,272 mg/dL, DM postC. Urine protein: 130 ± 295 mg/dL preC. Triglycerides preC 199 ± 77 vs. 2 mL/min postC (P = 0.058). Cholesterol preC 165 ± 46 vs. 209 ± 116 mg/dL postC (P = 0.004). Mean time switch 15 ± 18 months (0-62 months), 10 px converted to SIR in 0-30 days postOLT (5 start), 9 px of 1-6 months (m), 5 of 6-12 m, 5 of 12-24 m, 3 of 24-36 m and 6 of 36-62 m. 4/38 (10%) experienced rejection postC: 2 used SIR start and experienced rejection at 6 days and 2 m postC, 2 were converted to SIR 2 and 6m postSIR, both experienced rejection postC 2-4 m. 3 px received SIR for rejection. Nine px died (24%), for reasons not attributable to the SIR. There were no thrombosis of the hepatic artery. Tracking postC SIR 52 ± 35 m. 13/38 px (34%) were able to reduce the dose of SIR to 1 mg/day or 1 mg/3 day as the only IS. Conclusions. SIR therapy can be safe in postOLT px, improved renal function and resolved neuropsychiatric manifestations. 10% experienced rejection postC. 18% developed proteinuria, mostly mild. There was an increase in cholesterol and triglyceride decrease over time. SIR IS decreased to minimum to long term was achieved in 34% of cases.

This work has been funded entirely by own resources. The authors declare that there is no conflict of interest.

**AUTOLOGOUS HEMATOPOIETIC STEM CELLS TRANSPLANTATION FOR IMPROVING POSTTRANSPANTATED LIVER DRAF FUNCTION. A CASE REPORT**

Case report. A 27 years old male patient, who underwent Orthotopic Liver Transplantation in 2001 due to cirrhosis related to hypoplastic biliary tract, initially presented with transient cholangitis episodes and persistent cholestasis evidenced by ALKP, GGT levels three times above upper limit of normal. Prednisone, tacrolimus and mycophenolate were used for immunosuppression. On May 2007 a liver biopsy (LB) showed chronic liver disease, 3/6 fibrosis, 5/18 activity, ductal proliferation, intracellular and intracanalicular cholestasis, and no acute rejection. On August 2007 after receiving three sessions of hepatic dialysis (MARS), great clinical improvement was achieved. On September 2007 Fibromax: F4 (0.74), A2-A3 (0.01). Ursodeoxycholic acid, SaMe and antioxidants were prescribed. His condition worsened gradually thereafter, peaking on 2012 by abnormal GGT 516, ALKP 429, TB 6.5, AST 521, ALT 271, total bile acids (TBA) (table), foetor hepaticus and ammonia 37 (30). On July 12, he received 4 sessions of MARS, followed by 300 ug sc/d/x 5 days GM-CSF dosing until reaching 38,000 leucocytes. On August 1st an autologous CD34+ hematopoietic stem cells transplantation (AHSTC) was done through portal vein (24.7 x 106/50 mL) (transhepatic) by interventional radiology, a LB was also done, and showed cirrhosis, lacking biliary ducts, cholestasis, cholangitis, chronic rejection could not be excluded. CD34+ immuno-histochemistry was negative. Six months follow-up showed an improvement in liver function, inflammatory mediators (Table 1). Conclusion. The first successful AHSTC case post liver transplant is reported. This option could delay the need of retransplantation or be used as a bridge to it. This work has been supported by Liver Unit own resources.

**009**

**EVALUATION OF THE NUTRITIONAL STATUS OF PATIENTS SUBMITTED FOR LIVER-TRANSPLANTATION EVALUATION AT THE INCNMSZ INSTITUTE AND ITS IMPACT ON MORTALITY**

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**Introduction.** Undernourishment in patients with advanced liver disease prevails from 50 to 90%. It is associated with a higher morbidity and mortality risk. **Objective.** Describing the nutritional status of patients submitted for Orthotopic Liver Transplantation (OLT) evaluation and their outcomes (deaths, alive, OLT). **Material and methods.** A prospective cohort study (August, 2011-August, 2012) included 48 patients submitted for nutritional evaluation within the OLT protocol at the INCNMSZ Institute. The following variables were obtained and analyzed: age, gender, validated body mass index (BMIv), MELD, weight (kg), height (cm), arm circumference (AC), and tricipital skin fold (TSF) with a body composition analyzer. The phase angle (PA) was calculated, and the body cell mass (BCM) and muscle strength (MS) were measured with a hand dynamometer. Undernourishment was considered with a BMIv in cirrhotic patients < 22 kg/m² without ascites; < 23 kg/m² with mild-moderate ascites; and < 25 kg/m², ascites to tension. The muscle reserve was measured as PA < 5.4, BCM < 35%, non-dominant arm’s MS in females < 14Kgf, in males < 30 kg/F, and arm muscle circumference (AMC) and TSF < 5th percentile. Non-parametric Spearman and Pearson’s frequencies and correlations were analyzed. The statistical analysis was conducted using SPSS v17.0, with statistical significance p < 0.05. **Results.** Out of the 48 patients, 29 (60%) were males with a median age of 50 years (20-68); when measuring BMIv 40% of the patients were undernourished. 83% had a low BCM, 79% with a low PA and 81% with low MS, finding a significant correlation of (≤ 0.025), (≤ 1.032) and (≤ 0.05) with the BMIv. The outcomes are alive, dead, and OLT: 32 patients (67%) alive, 20% undernourished and with low MS; 5 (10%) dead, undernourished in 100% of cases, and with lower MS (median 8.6Kgf/F) than in undernourished alive patients; and 11 (23%) OLT, with appropriate BMI and low MS. All of them with nutritional care and follow-up. **Conclusions.** Undernourishment and low muscle reserve are frequent in patients with advanced cirrhosis. The relationship between these 2 parameters (undernourishment by BMIv and MS, as per hand dynamometer, have a direct impact on the mortality of these patients. Thus, the nutritional intervention is very important. The authors declare that there is no conflict of interest.

**010**

**CHOLESTASIS IN BILE DUCT INJURY**

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**Introduction.** During bile duct injury level of hepatocytes and cholangiocytes performed a series of metabolic changes that are part of the pathophysiology of this scenario. In the

<table>
<thead>
<tr>
<th>Table 1.*</th>
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<tbody>
<tr>
<td>2 months</td>
<td>PreMARS</td>
<td>PostMARS</td>
<td>TACH</td>
<td>Day 30</td>
<td>Day 60</td>
<td>Day 120</td>
<td>Day 180</td>
<td></td>
</tr>
<tr>
<td>T. bilirubin (mg/dL)</td>
<td>5.91</td>
<td>7.4</td>
<td>5.8</td>
<td>7.9</td>
<td>7.1</td>
<td>3.2</td>
<td>2.9</td>
<td>2.1</td>
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<tr>
<td>Albumine (g/dL)</td>
<td>3.8</td>
<td>2.8</td>
<td>2.6</td>
<td>3.5</td>
<td>3.4</td>
<td>4.9</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>AST (UI/L)</td>
<td>166</td>
<td>82</td>
<td>74</td>
<td>60</td>
<td>56</td>
<td>73</td>
<td>91</td>
<td>54</td>
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<tr>
<td>ALT (UI/L)</td>
<td>189</td>
<td>61</td>
<td>51</td>
<td>46</td>
<td>46</td>
<td>62</td>
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<td>ALKP (UI/L)</td>
<td>310</td>
<td>295</td>
<td>275</td>
<td>328</td>
<td>447</td>
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<td>GGT (UI/L)</td>
<td>788</td>
<td>78</td>
<td>-</td>
<td>273</td>
<td>175</td>
<td>192</td>
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<tr>
<td>ICAM (pg/mL)</td>
<td>-</td>
<td>4,652</td>
<td>-</td>
<td>3,972</td>
<td>5,345</td>
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<td>IL-6 (pg/mL)</td>
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<td>-</td>
<td>1,621</td>
<td>1,370</td>
<td>1,457</td>
<td>1,398</td>
<td>723</td>
</tr>
<tr>
<td>TBA (µmol/L)</td>
<td>246</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>159</td>
<td>77</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*008. AUTOLOGOUS HEMATOPOIETIC STEM CELLS TRANSPLANTATION FOR IMPROVING POSTTRANSPLANTED LIVER GRAFT FUNCTION. A CASE REPORT.
bile duct injury can find several scenarios and independently of these will develop cholestasis. The prevalence in the bile duct injury has variability according to several studies this is between 0.1 to 0.6% in cholestasis. The formation of bile is a vital function, and its impairment by drugs or infectious, autoimmune, metabolic or genetic syndrome result known as cholestasis. **Objective.** A review of the literature based on the pathophysiology of cholestasis and bile duct injury. **Development.** Cholestasis is a disorder of the coleoptosis and bile secretion by either a mechanical or functional obstruction to bile flow extrahepatic bile ducts. Jaundice may occur with or without jaundice. Cholestasis is associated with increased serum concentrations of compounds that are normally excreted in the bile, such as bile acids, bilirubin and enzymes alkaline phosphatase (ALP), gamma-glutamyl transeptidase (GGT) and others. The result gives retention cholestasis bile acids, bilirubin, and substances that are removed with the bile. A submicroscopic level changes in cell membrane and adhesion structures and communication of hepatocytes called tight junctions. Damage in hepatocyte membranes and bile canaliculi causes increased permeability and reduced osmotic pressure gradient. **Conclusions.** Cholestasis is a phenomenon that occurs in the bile duct injury and management within a number of measures reported in the literature, specific as cholestyramine, UDCA, phenobarbital, rifampin. It has been demonstrated as a follower reliable monitoring alkaline phosphatase because this increases in duct obstruction and inflammation in the ductal epithelium. Even in the absence of obstructive processes therefore proposed to the FA and GGT for monitoring patients with biliary Rebuilding.

The authors declare that there is no conflict of interest.

011

**TOXIC EFFECTS OF WEEKEND ETHANOL CONSUMPTION ON BIOCHEMICAL PARAMETERS OF TWO DIFFERENT DOSES**

**Material and methods.** We utilized male Wistar rats (weight 250 g) fed ad libitum. They were divided as follows: a) Control group, b) Group with ethanol (1.5 g/kg, concentration at 5%), and c) group with ethanol (1.5 g/kg, concentration at 40%). The ethanol was administered intragastrically (i.g.) twice weekly during 2 months. The rats were sacrificed and their serum was obtained, from which we quantified concentrations of glucose, cholesterol, triglycerides, albumin and enzyme activity glutamic-oxalacetic transaminase (GOT) and glutamic pyruvic transaminase (GPT), by means of spectrophotometric techniques. **Results and Discussion.** The activity of GOT as well as that of GPT increased significantly in both groups with ethanol in comparison to the control, this increasing higher in the group at 5%. Cholesterol levels decreased only in the group at 5% (30%). Triglycerides as well as glucose levels increased significantly in the group at 5% in comparison to the control. Albumin levels were not altered in any group with ethanol. The greatest biochemical alterations were observed in the group at 5%. **Conclusion.** We conclude that weekend alcohol consumption affects diverse biochemical parameters and that consumption of ethanol at 5% causes even greater damage. The authors declare that there is no conflict of interest.

012

**HEPATOPROTECTIVE EFFECT OF SILDENAFIL AND METFORMIN IN ISCHEMIA-REPERFUSION INJURY IN RATS LONG EVANS**

**Objective.** To evaluate the sildenafil and metformin effect in damage induced by IR in rat liver. **Material and methods.** A total of 20 male Long Evans rats (300-350g) were divided into 4 groups (n = 5). The first group (sham), only laparotomy was performed. The group IR was obstructed portal triad for 20 min and after a period of 60 min of reperfusion, blood samples were collected. The sildenafil group received 50 mg/kg orally 1 h before IR, the last group received metformin 500 mg/kg orally 1 h before IR. We quantified serum ALT, AST, LDH, IL-1β, IL-6 and TNF-α. **Results.** Significant difference in ALT was found in Sham vs. IR (P = 0.03) and R/R vs. sildenafil + IR (P = 0.02), AST in Sham vs. IR (P = 0.03) and R/R vs. Met + IR (P = 0.01), LDH vs. Sham IR (P = 0.02), IR vs. sildenafil + IR (P = 0.006) and R/R Met vs. IR (P = 0.002). IL-1β was the only one showing significant difference in the Sham group vs. IR and Met + IR (P = 0.005) and IR vs. Sildenafil (P < 0.05). In the Sham group and Met + IR did not find any correlation in the group IR: ALT with LDH (r = 1.000 P = 0.01) and in the group with sildenafil: AST with LDH (r = -0.885 P = 0.046). **Conclusions.** There is a marked decrease in the values of liver enzymes in the two types of treatment vs. IR group. Both drugs achieved a hepatoprotective effect by reducing levels of liver enzymes compared to IR group. The authors declare that there is no conflict of interest.

013

**PREVALENCE OF METABOLIC SYNDROME IN LIVER TRANSPLANTATION PATIENTS IN THE INSTITUTO NACIONAL DE CIENCIAS MÉDICAS Y NUTRICIÓN SALVADOR ZUBIRÁN (INCMNSZ): PRELIMINARY RESULTS OF 3 AND A HALF YEARS OF FOLLOW-UP**

**Introduction.** Ischemia-reperfusion (IR) involves the formation of reactive oxygen species coupled with an excessive inflammatory response. Recent studies have demonstrated that sildenafil and metformin also reduces the damage induced by IR in heart and kidney, however there are no reported effect on liver. **Conclusions.** The study of the sildenafil and metformin effect in damage induced by IR in rat liver.
Introduction. Metabolic disorders (MS) are frequently found in patients with orthotopic liver transplantation (OLT). The prevalence reported is 43-58%; systemic arterial hypertension (SAH), 40-85%; diabetes mellitus (DM), 13-61%; dyslipidemia (DLP), 40-66%; and obesity 24-40%. Objectives. Describing the prevalence of MS in liver transplantation patients in the INCMNSZ institute. Material and methods. Patients who received a liver transplantation at the INCMNSZ Institute, analyzed: gender, age at the time of transplantation, body weight (in kilograms), size (in centimeters), body mass index (BMI), lipid profile, fasting glucose, and blood pressure, as well as the pharmacological treatment for diabetes mellitus (DM), arterial hypertension (AHT) or dyslipidemia (DLP), pre-transplantation, at one year and at 3.5 years after liver transplantation. For MS diagnosis, the NCEP-ATP guidelines were used. Results. From 2005 to 2010, 30 patients were transplanted (16 men and 14 women), a median age of 52.8 years. Nineteen (63%) were transplanted due to HCV; five (16%) due to primary biliary cirrhosis; three (13%) with auto immune hepatitis; and three patients (13%) due to other causes. Out of the patients diagnosed with VHC, 5 (26%) had hepatocellular carcinoma, 22 (73%) met the criteria for metabolic syndrome. Pre-transplantation, BMI (kg/m²) had a median of 24.2 kg/m² (18.5-24.9). It did not change significantly at one year, but it did at 3.5 years of follow-up with p < 0.05. Triglycerides from 130.4, increased at one year to 153.6; HDL lipoproteins pre-transplantation, at one year and at 3.5 years after liver transplantation. Conclusions. Those patients transplanted due to HCV were those more associated to MS. Changes were observed at 3.5 years post-transplantation. The authors declare that there is no conflict of interest.

B. CIRRHOSIS AND COMPLICATIONS

001

COMPARISON BETWEEN RIFLE AND AKIN CRITERIA IN THE EVALUATION OF ACUTE KIDNEY INJURY IN HOSPITALIZED CIRRHOTIC PATIENTS


Objectives. Describing factors related to relapse of PBC in transplanted patients. Materials and methods. Retrospective study included 15 recipients of a liver transplant, with PBC diagnosis in the INCMNSZ Institute. The following variables were analyzed: gender, age at time of transplantation, pre-transplant MELD, relapse of PBC, rejection, time of OLT at rejection, transplantation time at last visit, immune suppression, infectious complications, type of infection and chronic complications. Results. From 1989 to 2010, 15 patients with PBC received an OLT. Median age of recipients was 46 years (41-49), and 93% were females. Pre-OLT MELD average was 14 (6-38). Age of donors was > 55 years old. Five patients had a relapse regarding PBC (33%); stage 2, (2); and stage, 3 (3). Time elapsed between the transplant and relapse was 2.8 years (2 months-10 years). Nine patients (60%) showed rejection with severity graded with Banff as grade 1 (33%), 2 (13%), and 3 (13%). Four individuals (44%) had early rejections; and 5 (56%), late rejections. Eight (53%) patients had infectious complications: 6 bacterial cases (3 pneumonias, 2 urinary tract infections, 1 cholangitis abscess), 1 cytomegalovirus, and 1 Candida infection. Relapse regarding PBC was more frequently observed in patients with infectious complications, and out of them, bacterial ones (p = 0.04). Relapse of PBC relapse also had a correlation with rejection (p = 0.02). Non-induction was more associated to rejection, and thus to relapse in relation to PBC. Post-transplant survival of these 15 patients in regards to PBC and graft is 80% at 10 years. Conclusions. Relapse in relation to primary biliary cirrhosis in post-transplanted patients was found to be associated to infectious diseases. Non-induction was associated to acute cellular rejection, and thus to the relapse in relation to PBC. The authors declare that there is no conflict of interest.
The authors declare that there is no conflict of interest.

Table 1.* Comparison of admission glomerular filtration rate in patients stratified by AKIN and RIFLE criteria.

<table>
<thead>
<tr>
<th>GFR equation</th>
<th>AKIN stage</th>
<th>Median</th>
<th>SD</th>
<th>P value</th>
<th>GFR equation</th>
<th>RIFLE stage</th>
<th>Median</th>
<th>SD</th>
<th>P value</th>
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</thead>
<tbody>
<tr>
<td>COCKCROFT</td>
<td>1</td>
<td>41.165000</td>
<td>2.170000</td>
<td>0.366000 COCKCROFT</td>
<td>R</td>
<td>80.822308</td>
<td>20.9617688</td>
<td>0.0030000</td>
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</tr>
<tr>
<td></td>
<td>2</td>
<td>45.585000</td>
<td>4.920000</td>
<td>0.409000 D</td>
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<tr>
<td>MDRD</td>
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</tr>
<tr>
<td>CQ-DI</td>
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<td>37.790</td>
<td>0.716 CQ-DI</td>
<td>R</td>
<td>71.86</td>
<td>17.277</td>
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<td>47.53</td>
<td>12.720</td>
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</tbody>
</table>

* 001. COMPARISON BETWEEN RIFLE AND AKIN CRITERIA IN THE EVALUATION OF ACUTE KIDNEY INJURY IN HOSPITALIZED CIRRHOTIC PATIENTS.

found in subjects in risk or in kidney damage. In conclusion, RIFLE classification is superior to AKIN as a AKI prediction tool in hospitalized cirrhotic patients. Early identification of AKI will allow prompt targeted interventions and reduce mortality in this population.

The authors declare that there is no conflict of interest.

002

EFFICACY OF BIOELECTRICAL IMPEDANCE AND DYNAMOMETRY IN THE NUTRITIONAL ASSESSMENT OF AMBULATORY PATIENTS WITH CIRRHOSIS

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Background. Protein-calorie malnutrition is a common finding in cirrhotic patients, described in up to 80%, regardless of the stage disease. Malnutrition is associated with altered immunity, which increases the risk of complications and mortality. Because of this, it is considered a prognostic factor in chronic liver disease. Objective. To compare hand-grip strength against bioelectrical impedance phase angle to evaluate the frequency of protein-calorie malnutrition in ambulatory cirrhotic patients. Material and methods. Prospective study of 23 consecutive cirrhotic patients seen in an ambulatory clinic. Nutritional state assessment was performed through hand-grip strength and bioelectrical impedance phase angle. Statistical analysis was made with SPSS for Windows, version 17.0. Continuous variables were expressed as mean and standard deviation; categorical values as percentages. We used Wilcoxon’s rank test and Student t test to compare means. P values < 0.05 were considered significant. Results. 52.2% of the study group were male. 34.8% were Child A; 39.1% Child B; and 26.1% Child C. Malnutrition was detected by dynamometry in 43% of the population, and in 39% by impedance. Those whose malnutrition was determined by dynamometry, 40% were classified as Child C, 30% Child B and 30% Child A. As expected, we found significant differences between gender in the dominant hand-grip strength (13.18 ± 14.71 in males and 47.82 ± 17.16 N in females p < 0.001); in their weight (67.76 ± 13.91 vs. 82.47 ± 17.47 kg, respectively p > 0.001), body fat percentage (34.77 ± 8.89 vs. 23.23 ± 5.67 p > 0.001), total body water (30.38 ± 5.28 vs. 46.06 ± 8.19 p > 0.001) and impedance measurements (603.91 ± 109.89 vs. 495.58 ± 75.79 Ω). Conclusions. Protein-calorie malnutrition was detected in 43% of the study subjects by dynamometry, and in 39% by bioelectrical impedance phase angle, which indicates that both methods are effective for the evaluation of the nutritional state in cirrhotic patients. Up to 30% of Child A presented with malnutrition, which has an impact in their overall prognosis. It is necessary to consider nutritional support alternatives for this specific population.

The authors declare that there is no conflict of interest.

003

TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNT (TIPS) DYSFUNCTION ASSESSED BY DOPPLER ULTRASOUND. A COHORT STUDY

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Background and aim. TIPS is a rescue intervention for refractory ascites or variceal bleeding and is a shunt between the hepatic vein and portal vein, it is considered a bridge for transplantation. Covered stents have lower dysfunction rates than bare ones. Surveillance after TIPS placement includes Doppler ultrasound to measure the flow within the prosthesis, speeds < 50 cm/sec or > 200 cm/sec are associated with dysfunction (stenosis or neointimal proliferation), low speeds are more specific for dysfunction of covered TIPS and high ones of uncovered TIPS. The aim of this study is to evaluate the usefulness of Doppler ultrasound to detect TIPS dysfunction. Material and methods. Prospective cohort of 15 patients (2006-2010). Doppler was performed at 24 h, 1 and 3 months, when results were suggestive of dysfunction (speed > 200 cm/sec, speed < 60 cm/sec, stenosis > 50%, recurrence of bleeding or ascites). To compare the groups Fisher’s exact test and Mann Whitney test were performed. Results. 53% were men, median age was 48 (18-63). The etiology of portal hypertension was Budd-Chiari (4/15), alcohol (5/15), PBC (3/15), HCV (2/15) and AIH (1/15). TIPS indications were refractory ascites (67%), refractory bleeding (27%) and hydrothorax (7%). Flow in the inferior third at 24 h was 47 (43-51) and 98 (72-217) in patients who developed and didn’t develop stenosis (p = 0.02). Flow in the upper third after 30 days was 136 (81-230) and 56 (53-123) in patients who had and didn’t have stenosis (p = 0.063), portal flow was 43 (31-100) vs. 23 (19-35) with p = 0.04. Regarding mortality, the presence of stenosis after the first month had an OR of 1.1 (CI0.7-2.1) when compared with those without a stenosis. After TIPS placement 47% developed encephalopathy, with 2 patients being difficult to treat. Conclusions. Altered flow in the lower
Background and aim. Hepatic cirrhosis is the terminal stage of hepatic fibrosis that appears as a consequence in the chronic course of several liver diseases. It is an important health problem in the world, conditioning high rates of morbidity and mortality. In Mexico it is reported as the fifth cause of mortality, being the main etiologies alcoholic liver disease and hepatitis C virus infection. The chronic course is associated with an important morbidity with a negative impact in quality of life. In this work we look for evaluating the impact of certain clinical and demographic variables in the evaluation of quality of life using the SF-36 questionnaire in a sample of the patients treated in the Liver Clinic in Hospital General de México (HGM).

Material and methods. Transversal, analytic and protective design. 29 patients were evaluated in the Liver Clinic of HGM using the SF 36 questionnaires. Descriptive statistics were used for demographic variables. Differences between groups were evaluated using the Kruskall Wallis Test for quantitative variables and \( \chi^2 \) for qualitative variables. Spearman rho was used for establishing correlation between questionnaire items and variables. Results. 29 patients were evaluated, 15 men and 14 women (51.7 and 48.3%), 10 (34.5%) patients with liver disease classified as Child A, 10 (34.5%) Child B and 9 (31%) as Child C. The most frequent cirrhosis cause was alcoholic liver disease (51.7%), followed by chronic C hepatitis (13.8%). The lowest score in the questionnaire was found in the Child Pugh C group, without significant differences. Nor significant differences were found comparing groups by etiology. An inverse correlation was found in the physical component of the SF36 with the monthly spent attributed to the disease, MELD and Child Pugh classification.

Conclusions. This analysis suggests that several clinical factors contribute in the patient’s quality of life. The increment in the sample and the evaluation of other clinical factors could traduce important differences in the quality of life impact, allowing to establish opportune alternatives in therapy. The authors declare that there is no conflict of interest.

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004
QUALITY OF LIFE EVALUATION IN CIRRHOTIC PATIENTS IN HOSPITAL GENERAL DE MÉXICO


Background. Acute on chronic liver failure (ACLF) is characterized by a sudden deterioration of liver function which lead to end-organ dysfunction. Complex prognostic scores have been described to assess the prognosis of this lethal disease. Nevertheless, in order to find an accurate marker to predict outcome at end-stage cirrhosis, we proposed that bilirubin, a simple liver function marker which is widely used by prognostic scores in hepatology, might be a suitable marker to evaluate the outcome in ACLF patients. This could help to prioritize those patients in which liver transplantation is the only therapeutic choice. Aim. To investigate the role of bilirubin in predicting short term prognosis in ACLF patients.

Material and methods. We carried out a retrospective cohort study of patients with diagnosis of ACLF with at least 1 week follow-up during 7 years (2005-2012) in Medica Sur Hospital. Demographic, clinical and biochemical variables (creatinine, international normalized ratio, sodium, conjugated and unconjugated bilirubin and albumin) were analyzed to draw the receiver-operating characteristic-curves (ROC) at the first day hospital admission and the outcome patient at one week. Results. In a cohort of 66 patients, 32/34 (women/men), with an age average of 64 (range 25-87 years). Chronic liver failure was secondary to: hepatitis C virus infection (n = 20), cryptogenic cirrhosis (n = 27), alcoholic liver disease (n = 16) and hepatocellular carcinoma (n = 3). The majority of patients (59%) died within 1 week follow up. At the first day hospital admission, the AUCs data from conjugated bilirubin (0.757; 95%CI 0.636-0.877; P = 0.000), unconjugated bilirubin (0.731; 95%CI 0.606-0.857; P = 0.001) and total bilirubin (0.751; 95%CI 0.629-0.873; P = 0.001) were significantly higher. Accordingly to the outcome patient AUCs values, conjugated bilirubin (0.821; 95%CI 0.719-0.924; P = 0.000), unconjugated bilirubin (0.883; 95%CI 0.798-0.969; P = 0.000), total bilirubin (0.875; 95%CI 0.787-0.962; P = 0.000) were significantly higher (Figure 1) than the first day hospital admission values. Unconjugated bilirubin seems to be the most predictive outcome value in ACLF patients. Conclusions. Bilirubin could be a suitable marker in the prediction of short term prognosis in ACLF patients. High levels of unconjugated bilirubin may predict accurately the outcome of ACLF patients.
No potential conflict of interest relevant to this article was reported.

**006**

COMPARISON PROGNOSTIC SCALES IN DECOMPENSATED CIRRHOSIS

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**Introduction and objective.** There are various prognostic scales in patients with liver failure, which is located between MELD, MELD-Na, MELD-integrated, each with different parameters to help improve the prognostic evaluation. MELD is important to its ability to accurately measure the severity and effectively assess mortality risk, prioritize organ allocation. MELD sodium proposal to improve the assessment of prognosis, since sodium levels associated with the severity of liver failure. To try to improve the accuracy of the scale parameter are added as in the case of integrated MELD. **Objective.** To determine which is the best prognostic scales to assess mortality in decompensated liver failure. **Material and methods.** 82 patients admitted to the Gastroenterology Service at Hospital Juárez de México with decompensated liver failure, period 2009-2012. We calculated MELD, MELD-Na and MELD-integrated admission. **Results.** 82 patients, 32 women and 50 men, mean age 55.5 years. By Spearman correlation analysis shows that there is a correlation between the three prognostic scales and mortality in the patient group. With a higher correlation between mortality and the MELD-Na-scale (392 p < 0.000), and integrated MELD (0.466 p < 0.000). **Conclusions.** These scales in liver failure are an important tool in determining prognosis; we can see that the scale-integrated MELD which uses sodium and age as variables, it is best to determine mortality in our population. The authors declare that there is no conflict of interest.

**007**

MELD SCORE (INTEGRATED MELD MODEL) AS A PREDICTOR OF DECOMPENSATION EVENTS AND MORTALITY IN PATIENTS WITH CIRRHOSIS

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**Introduction.** The Model for End-Stage Liver Disease (MELD), was developed as a prognostic model to predict mortality in cirrhotic patients awaiting liver transplantation, replacing the Child-Pugh model. Additional variables have been added to the known models, improving forecast accuracy. The iMELD score (integrated MELD model) validated in Europe in 2007, being more certain prognostic showed that MELD and MELD-Na. In our population, there are no studies that validate this score. The objective was to determine the usefulness as prognostic score compared to those commonly used for one-year mortality and its relation to the number of events of decompensation in cirrhotic patients. **Material and methods.** Retrospective study was conducted based on an analysis of 97 cases of patients with decompensated cirrhosis of any etiology, who attended the Gastroenterology Department of Hospital Juárez de México, from January 2008 to March 2012. We performed analysis of objective variables. Clinical variables included age, sex, cause of liver disease. Ascites and encephalopathy were not included. The biochemical variables included bilirubin, INR, sodium and creatinine. MELD, MELD-Na and iMELD score were calculated for each patient in the first episode of decompensation and mortality was assessed annually. Statistical analysis was performed using bivariate Spearman correlation coefficient. **Results.** Of a total of 97 patients, 57.7% were men; and after 12 months of follow-up 15 patients died (15.4%). The bivariate analysis using the Spearman correlation coefficient showed a positive correlation between the scales MELD (0.284 p < 0.005), MELD-Na (0.387 P < 0.000), iMELD (0.447 p < 0.000) with mortality. The scale iMELD not correlate with the number of events decompensation (0.177 p < 0.083). **Conclusions.** In our study, the iMELD score performed better than original MELD-Na predicting mortality to 12-month mortality, but not correlated with the number of events of decompensation, however if the number of events correlated with mortality, this can be explained because the main cause death was variceal gastrointestinal bleeding. Prospective studies are needed with larger numbers of patients to validate this scale and its utility in our population. The authors declare that there is no conflict of interest.

**008**

PREVALENCE OF ACUTE KIDNEY INJURY IN PATIENTS WITH VARICEAL BLEEDING IN THE GASTROENTEROLOGY SERVICE OF LA RAZA CENTRO MÉDICO NACIONAL

**LUNA-HIDALGO L, RUBALCABA-MACÍAS E, CASTILLO-BARRADAS M**

SERVICIO DE GASTROENTEROLOGÍA, HOSPITAL DE ESPECIALIDADES DR. ANTONIO FRAGA MOURET, CENTRO MÉDICO NACIONAL LA RAZA, CIUDAD DE MÉXICO, MÉXICO.

**Background and aim.** Variceal bleeding is a severe complication of cirrhosis and portal hypertension, causing up to 70% of episodes of gastrointestinal bleeding, acute kidney injury occurs in up to 11% of these patients, is related to the severity of bleeding, degree of liver failure and this injury is progressive in 60% of cases and is currently considered one of the most important prognostic factors for recurrent bleeding and mortality. **Aim.** To determine the prevalence of acute kidney injury using AKIN criteria in patients admitted to our department with the diagnosis of variceal bleeding from January 2012 to January 2013. **Material and methods.** We reviewed medical records of patients admitted with a diagnosis of variceal bleeding, obtaining demographic, clinical and laboratory data at admission and within 6 months, to determine the presence of acute kidney injury using the AKIN criteria, we excluded patients with a previous diagnosis of chronic kidney disease, results were expressed in averages and percentages. **Results.** We included a total of 16 patients, 38% male and 63% female, mean age 57 years, the most common causes of cirrhosis were hepatitis C (25%), alcohol (25%) and cryptogenic (25%), 69% of them had a prior episode of variceal bleeding, 75% were on beta-blocker prophylaxis with MELD admission average of 14 and 75% of patients were in Child B, 19% A and 1% C. 31% had shock at admission and 63% required blood transfusion, was administered in 81% terlipressin or octreotide and 94% of them indicated antibiotic prophylaxis. Two patients (13%) had AKI being this AKIN II and III respectively.
reversible and both in Child Pugh B. No patient had early re-bleeding, or death during hospitalization. **Conclusions.** The prevalence of acute kidney injury in this study was 13% which is similar to that reported in previous studies. The authors declare that there is no conflict of interest.

**009**

**HEPATOCELLULAR CARCINOMA OF CLEAR CELL: CASE REPORT**

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**Introduction.** The hepatocellular carcinoma is most common tumor lesion. It can be classified according to their histological lineage, which includes various cytological types, as: clear cell carcinoma is one of the rarer, and where the primary hepatocellular carcinoma of clear cell, represents a frequency of 2.2 to 6.7% of the reported in the world literature. **Case report.** Male 56 years of age.born and resident in area of Arsenicosis of mostly through drinking water. **Background.** With genetic cardiovascular disease type systemic arterial hypertension and cerebral vascular disease burden. It denies a cancer history in the family. Positive alcohol at a rate of 4.5 litres of beer (235 mL. 14 beers). Every 21 days. Starts it so insidious for more than three months, with clinical picture characterized by pain type burning intensity 8-9/10 located at right, without irradiation, continuous, exacerbated with respiratory movements which ceded administration of anti-spasmodic as anticholinergic, later continued with accentuation of symptoms, as well as hyperoxia, until you reach anorexia, with pain postprandio, with irradiation at lumbar spine. As well as gag State, without vomiting, symptoms continue now with weight loss, concerns during this time weight loss of more than 12 kg. Concerned also over 38.5°C febrile episodes, as well as diffuse diaphoresis. Phisical examination. Liver enlargement more than 5 cm below rim rib, with mass at epigastric painful, soft consistency on palpation with irradiation to lumbar spine. Severe. Laboratory. Hipoalbuminemia, leukocytosis with neutrophilia, important lengthening of the time of prothrombin, and rise to more than three times the normal alkaline phosphatase, LDH discreetly high. Computed tomography. Are they carried out two studies, the first concludes it’s focal steatosis, and in the study carried out in our unit, it is heterogeneous tumor lesion in their densities, which can correspond to Hemangioma, or their malignant version, respects left lobulo. Magnetic resonance. Not unlike its sensitivity and specificity is higher. **Model.** To correlates the results of FibroTest with APRI, FORNS, FibroIndex and FBI4 among others. The FibroTest is another model that uses biochemical parameters of hepatic synthesis so its sensitivity and specificity is higher. **Objective.** To correlate the results of FibroTest with APRI, FORNS, FibroIndex and FBI4 indices to predict the presence of fibrosis in Mexican patients with chronic liver disease. **Material and methods.** A cross-sectional study, we reviewed records with any diagnosis of chronic liver disease, which had Fibrotest, clinical and biochemical data for the models to predict fibrosis. Approved formulas were used to obtain results of APRI, FORNS, FibroIndex and FBI4. Spearman correlation was used 95% and ROC curves for sensitivity and specificity. **Results.** 76 patients were included, with the conditions listed in table 1. The Spearman correlation coefficient of 0.57 for APRI, FORNS 0.60, 0.77 FibroIndex FIB-4 compared to FibroTest 0.77 (p < 0.0001). Comparing advanced fibrosis and Fibrotest sensitivity and specificity of APRI index was 84 and 78%, FORNS 76 and 64%, FibroIndex 84% and 81%, FBI4 68 and 67%. The area under the curve with 95% CI was: APRI 0.871 (0.759-0.955), FORNS 0.754 (0.627-0.881), FibroIndex 0.871 (0.778-0.963) and FBI4 0.851 (0.755-0.947). **Conclusions.** With Fibrotest as reference, the model that best predicts fibrosis is FibroIndex, followed by APRI, FBI4 and finally FORNS. The authors declare that there is no conflict of interest.

**010**

**CORRELATION BETWEEN FIBROTEST AND APRI, FORNS, FIBROINDEX AND FBI4 TO ASSESS LIVER FIBROSIS**


**Background.** Fibrosis is the outcome of chronic liver damage, and may result in development cirrhosis or revert this condition, so the evaluation is needed for treatment and monitoring of liver disease. Due liver biopsy disadvantages its necessary to have a non-invasive indicator of fibrosis. Some models are known like biochemical markers as APRI, FORNS, FibroIndex and FBI4 others. The FibroTest is another model that uses biochemical parameters of hepatic synthesis so its sensitivity and specificity is higher. **Objective.** To correlate the results of FibroTest with APRI, FORNS, FibroIndex and FBI4 indices to predict the presence of fibrosis in Mexican patients with chronic liver disease. **Material and methods.** A cross-sectional study, we reviewed records with any diagnosis of chronic liver disease, which had Fibrotest, clinical and biochemical data for the models to predict fibrosis. Approved formulas were used to obtain results of APRI, FORNS, FibroIndex and FBI4. Spearman correlation was used 95% and ROC curves for sensitivity and specificity. **Results.** 76 patients were included, with the conditions listed in table 1. The Spearman correlation coefficient of 0.57 for APRI, FORNS 0.60, 0.77 FibroIndex FIB-4 compared to FibroTest 0.77 (p < 0.0001). Comparing advanced fibrosis and Fibrotest sensitivity and specificity of APRI index was 84 and 78%, FORNS 76 and 64%, FibroIndex 84% and 81%, FBI4 68 and 67%. The area under the curve with 95% CI was: APRI 0.871 (0.759-0.955), FORNS 0.754 (0.627-0.881), FibroIndex 0.871 (0.778-0.963) and FBI4 0.851 (0.755-0.947). **Conclusions.** With Fibrotest as reference, the model that best predicts fibrosis is FibroIndex, followed by APRI, FBI4 and finally FORNS. The authors declare that there is no conflict of interest.

**011**

**NON VARICEAL GASTROINTESTINAL BLEEDING IN PATIENTS WITH LIVER CIRRHOSIS**

**Table 1.**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age (years)</th>
<th>BMI (kg/m²)</th>
<th>VHC</th>
<th>NASH</th>
<th>OH</th>
<th>Fatty liver</th>
<th>Criptogenic</th>
<th>CBP</th>
<th>VHB</th>
<th>HAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% male</td>
<td>59.6 (±13.6 SD)</td>
<td>27.4 (± 4.8 SD)</td>
<td>27</td>
<td>16</td>
<td>10</td>
<td>9</td>
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* 009. HEPATOCELLULAR CARCINOMA OF CLEAR CELL: CASE REPORT.
Introduction. Patients with liver cirrhosis (LC) may have upper gastrointestinal bleeding (UGB), associated or not to portal hypertension (PHT). It has been described that 25% of UGB in patients with LC belong to non-variceal etiology. Objective. To define the causes of UGB in patients with LC in a reference hospital. Material and methods. Observational retrospective study. Data collected from endoscopic studies performed in the Department of Endoscopies of Hospital de Especialidades, Centro Médico Nacional de Occidente, Instituto Mexicano del Seguro Social from March 2012 to February 2013 were used. There were included patients with clinical and biochemical diagnosis of LC, who presented UGB, showed up by hematemesis, melena or coffee grounds vomiting, who underwent endoscopy within the first 24 h after hospital admission. Results. 2,065 endoscopies were performed. Of which, 515 were performed in patients with LC. Of these, the indication for endoscopy in 48.2% (248) was clinical data of UGB, which, 515 were performed in patients with LC. Of these, the indication for endoscopy in 48.2% (248) was clinical data of UGB, associated or not to PHT. It has been described that 25% of UGB in patients with LC belong to non-variceal etiology. Material and methods. Randomised controlled trials comparing carvedilol vs. propranolol for portal hypertension treatment in cirrhotic patients. Material and methods. Randomised controlled trials comparing carvedilol vs. propranolol for portal hypertension in cirrhotic patients and esophageal varices with or without bleed history were included. The outcomes are expressed as odds ratio (OR), difference of means (DM) and confidence interval. Results. The search identified 14 citations, and 4 randomised controlled comparisons met the eligible criteria. The trials were conducted in Spain, India and Denmark, included a total of 161 patients, 82 underwent to carvedilol (6.5-50 mg/d) and 79 to propranolol (10-320 mg/d). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74) (Figure 1). The magnitude of reduction of HVPD was greater with carvedilol (DM-2.22; 95% CI -2.82 to -1.60 mmHg) and propranolol (DM-1.83; 95% CI -2.13 to -1.53 mmHg). Renal function, including glomerular filtration rate, serum creatinine and plasma renin activity were not different between the treatments. Adverse events leading to withdrawal occurred with the same frequency (OR 0.52; 95% CI 0.18-1.54). Finally there was no difference about variceal bleeding or mortality. Conclusions. This systematic review and meta-analysis showed that carvedilol is more effective than propranolol for hemodynamic response of portal hypertension in cirrhotic patients and there are no important differences about adverse effects. The authors declare that there is no conflict of interest.

012

CARVEDILOL VS. PROPRANOLOL FOR PORTAL HYPERTENSION IN CIRRHOTIC PATIENTS, SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS


Background. Carvedilol is a noncardioselective β-blocker with a-1 antagonism, it has been studied for the management of cirrhotic portal hypertension and appears to be more effective and well tolerated than propranolol. Aim. To analyze by systematic review and meta-analysis the benefit and harms of carvedilol vs. propranolol for portal hypertension treatment in cirrhotic patients. Material and methods. Randomised controlled trials comparing carvedilol vs. propranolol for portal hypertension in cirrhotic patients and esophageal varices with or without bleed history were included. The outcomes are expressed as odds ratio (OR), difference of means (DM) and confidence interval. Results. The search identified 14 citations, and 4 randomised controlled comparisons met the eligible criteria. The trials were conducted in Spain, India and Denmark, included a total of 161 patients, 82 underwent to carvedilol (6.5-50 mg/d) and 79 to propranolol (10-320 mg/d). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74) (Figure 1). The magnitude of reduction of HVPD was greater with carvedilol (DM-2.22; 95% CI -2.82 to -1.60 mmHg). Renal function, including glomerular filtration rate, serum creatinine and plasma renin activity were not different between the treatments. Adverse events leading to withdrawal occurred with the same frequency (OR 0.52; 95% CI 0.18-1.54). Finally there was no difference about variceal bleeding or mortality. Conclusions. This systematic review and meta-analysis showed that carvedilol is more effective than propranolol for hemodynamic response of portal hypertension in cirrhotic patients and there are no important differences about adverse effects. The authors declare that there is no conflict of interest.

013

NON INVASIVE PARAMETERS AS PREDICTORS OF HIGH RISK ESOPHAGEAL VARICES BLEEDING IN CIRRHOTIC PATIENTS

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Aim. To analyze by systematic review and meta-analysis the benefit and harms of carvedilol vs. propranolol for portal hypertension treatment in cirrhotic patients and esophageal varices with or without bleed history were included. The outcomes are expressed as odds ratio (OR), difference of means (DM) and confidence interval. Results. The search identified 14 citations, and 4 randomised controlled comparisons met the eligible criteria. The trials were conducted in Spain, India and Denmark, included a total of 161 patients, 82 underwent to carvedilol (6.5-50 mg/d) and 79 to propranolol (10-320 mg/d). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74). Carvedilol was superior to get HVPD decrease ≥ 20% from baseline value or to ≤ 12 mmHg (OR 2.92; 95% CI 1.26-6.74) (Figure 1). The magnitude of reduction of HVPD was greater with carvedilol (DM-2.22; 95% CI -2.82 to -1.60 mmHg). Renal function, including glomerular filtration rate, serum creatinine and plasma renin activity were not different between the treatments. Adverse events leading to withdrawal occurred with the same frequency (OR 0.52; 95% CI 0.18-1.54). Finally there was no difference about variceal bleeding or mortality. Conclusions. This systematic review and meta-analysis showed that carvedilol is more effective than propranolol for hemodynamic response of portal hypertension in cirrhotic patients and there are no important differences about adverse effects. The authors declare that there is no conflict of interest.
Background/Aim. The prevalence of esophageal varices in cirrhotic patients is approximately 60-80% and the risk of bleeding 25-35%, therefore, all patients with cirrhosis are recommended to undergo an evaluation to predict the presence of varices through noninvasive parameters to avoid invasive procedures. Material and methods. We recruited 99 patients with cirrhosis from February 2011 to February 2013. Parameters assessed include Child-Pugh class, platelet count, spleen size, portal diameter, portal vein flow, portal congestion index, and esophageal varices size in relation to history of bleeding. The relationship between this parameters and variceal bleeding was evaluated using univariate and multivariate approaches. Results. 99 cirrhotic patients (56 women and 43 men) were enrolled. Mean age was 57.8 (± 12.2), 46 patients (46.5%) had history of variceal bleeding. Of patients who had previously bleeding, 80% had thrombocytopenia, 82% presented large varices, 53% splenomegaly, 53% portal dilatation, previously bleeding, 80% had thrombocytopenia, 82% presented (46.5%) had history of variceal bleeding. In our patients, Child Pugh class neither thrombocytopenia, splenomegaly are not good predictors for variceal bleeding. About Doppler ultrasound only portal diameter seems to be associated with variceal bleeding, parameters as portal vein flow, portal congestion index, thrombocytopenia, splenomegaly are not good predictors for variceal bleeding. In our patients, Child Pugh class neither was significant. Also multivariate analysis to determine which variables were associated with variceal bleeding confirmed large varices [OR 11.1 (3.9-31.8, CI 95%), P < 0.0001] an portal diameter [OR 5.0 (1.1-21.7 CI 95%) P 0.03] as independent predictors of esophageal varices bleeding. Conclusion. Nowadays, the gold standard of measurement of portal venous pressure is the hepatic venous pressure gradient, but this is an invasive procedure not always available. We confirmed that variceal size is one of the best clinical predictors for variceal bleeding. About Doppler ultrasound only portal diameter seems to be associated with variceal bleeding, parameters as portal vein flow, portal congestion index, thrombocytopenia, splenomegaly are not good predictors for variceal bleeding. In our patients, Child Pugh class neither was significant. The authors declare that there is no conflict of interest.

014

PERITONEAL TUBERCULOSIS IN A SECONDARY BILIARY CIRRHOSIS PATIENT: A CASE REPORT

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Introduction. The reported incidence of tuberculous peritonitis (TBP) among all forms of TB varies from 0.1-0.7% worldwide. The risk of TBP is increased in patients with underlying liver cirrhosis, and the percentage of underlying cirrhosis among patients with TBP could be as high as 50%. The mortality rate may exceed 50% without prompt treatment. Case report. A patient of 50 years old, underwent laparoscopic cholecystectomy in 2009, complicated with biliary lesion, in September 2011 a Roux en Y hepatoyeyunostomy was performed, during surgery the liver was observed with macroscopic characteristics compatible with cirrhosis and was performed a liver biopsy reported as incomplete septal fibrosis. We evaluated patient because of ascites, associated to abdominal pain, occasional fever and altered liver biochemical tests, the initial ascites analysis showed glucose 0 mg/dL, LDH 6,763 U/L, leucocytes 22,500 mm³, the liver US compatible with cirrhosis and separted ascites, glucose: 159 mg/dL, creatinine: 2.07 mg/dL, total cholesterol 32 mg/dL, albumin: 2.2 g/dL, AST. 83, ALT: 192, total bilirubin: 38.19, direct bilirubin: 26.26 mg/dL, Na: 126 mmol/L, K: 4.8 mmol/L, hemoglobin: 9.9 g/dL, leucocytes: 7.200 mm³, platelets: 91,000 mm³. With the high suspect of TBP was solicited ADA, reported 36U/L. The patient was evaluated by the infectious diseases service and a scheme of isoniazid 250 mg QD, rifampin 600 mg QD, ethambutol 800 mg QD and pyrazinamide 1 g QD was started. However, the natural history of cirrhosis was observed in the patient and intermittent hepatic encephalopathy is the reason of previous hospitalization. Discussion. In this case we used ADA for diagnosis due the sensibility and specificity of the test reaching 100 and 97% respectively, and the results are not affected in patients with cirrhosis, this test is rapid and cheap contrary to PCR that is limited by high cost and low sensibility (60-80%). The incidence of drug-induced hepatitis may be greater and the implications of hepatotoxicity for patients with cirrhosis are potentially serious. The evidence in this group of patients indicates hepatotoxicity in 26%. The authors have not declared any conflict of interest.

015

FACTORS RELATED TO COEXISTENCE BETWEEN CHRONIC PANcreatITIS AND ALCOHOLIC LIVER CIRRHOSIS

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Introduction and aim: There a correlation between excessive alcohol consumption for many years and the risk of chronic pancreatitis (CP) and liver cirrhosis (LC). < 5% who are alcoholics develop CP and 2-35% will have LC. The concomitant presentation CP and LC is rare and has been poorly studied. The objective is to determine the frequency of CP in patients with LC secondary to chronic alcohol abuse (CA) and to evaluate the factors related. Materials and methods: We reviewed reports of autopsies performed in Hospital General de Mexico from January 1999 to December 2007 looking for diagnosis of LC secondary to CA. We recorded demographic data, coexistence of PC, smoking, time drinking, Child Pugh scale and pancreatic pain and diarrhea. Quantitative variables were expressed as mean and standard deviation (SD) or median and range according to their distribution; and qualitative variables as proportions and percentages. Results: We review data from 7,258 autopsy reports, 193 were diagnosed by LC for CA. Of these 54 (28%) had CP. Mean age 51.77 ± 11.34 in LC + CP vs 54.9 ± 13.88 no CP in LC (p = 0.14). In terms of gender 47 (87%) males and 7 (13%) women in CP + LC vs 112 (80.5%) men and 27 (19.5%) women in LC without CP (p = 0.39). Years of alcohol consumption 28.18 ± 11.74 in LC + CP vs 33 ± 14.72 in LC without CP (p = 0.06). 23 (42.8%) had smoking history in LC + CP vs 40 (28.8%) in LC without CP (p = 0.06) (odds ratio 1.5 (95% CI 1.0 to 2.4)). Child Pugh Classification: 1 (1.8%) stage A, 9 (16.7%) B and 44 (81.5%) C in LC + CP and 6 (4.3%) A, 28 (20.2%) B and 105 (75.5%) C in LC without CP (p = 0.53). 6 (11%) had a history of pancreatic pain and 1 (1.8%) of chronic diarrhea. Conclusions: We found coexistence of LC and CP in 28% of cases. This is more frequent in males and in the 6th decade of life. In the
Background: The methacetin-13C breath test (PAM-13C) is a non-invasive tool that allows for the measurement of the functional capacity of the hepatocytes, and for the prediction of liver cirrhosis, there is no information on its potential utility to predict survival in patients with liver disease. Objective: To evaluate the ability of the methacetin-13C breath test to estimate survival in patients with liver cirrhosis. Material and methods: Patients from 18 to 75 years of age diagnosed with chronic liver disease were selected. All patients underwent a physical examination, hematic biometry, blood chemistry, clotting time, tests of liver function and methacetin-13C breath test at the beginning of the study. Death was recorded during the three-year period of follow-up. Results: 151 patients were included (age, 56±13 years). The cause of liver disease was hepatitis C virus infection in 60 (39.7%), excessive alcohol ingestion in 22 (14.6%), and other causes in 69 (45.7%). According to the Child-Pugh index, patients were classified at stage A (n = 78), B (n = 57) or C (n = 16) at the beginning of the study. Methacetin-13C oxidation was significantly higher in patients with a Child-Pugh score A (7.34%e (0.14-31.49%) vs. B [3.7%e (0.38-22.35%)], and vs. C (0.76%e (0.11-7.75%e)). A significant inverse correlation was found between methacetin-13C oxidation and the Child-Pugh score (r = -0.349 p < 0.0001). Regarding complications, 125 patients were considered decompensated, of which 30 died; the survival probability was 61.3% in a follow-up period of 36 months (33.9 -38.1); The predictive variables for mortality were creatinine [HR = 3.19 (1.11-9.13)], total bilirubin [HR = 1.14 (1.08-1.24)], hematocrit [0.91 (0.84-0.98)], and methacetin oxidation [HR = 0.88 (0.78-0.97)]. Conclusion: Our results confirm the utility of PAM-13C as simple, non-invasive tool for assessing the functional capacity of the hepatocytes and as a predictor of survival in patients with decompensated cirrhosis. This work was partially supported by CONACYT and IMSS.

PREDICTIVE VALUE OF THE METACETIN-13C BREATH TEST IN PATIENTS WITH LIVER CIRRHOSIS

MORÁN SEGUNDO, MINA ALINE, ORTIZ NAYELI, CASTAÑEDA BEATRIZ, RODRÍGUEZ-LEAN, GUSTAVO, MEDINA ROBERTO, GUEVARA JOSÉ, DEHESA MARGARITA, URIBE MISAEL

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Conflict of interest: The authors declare that no competing interest exist.

PREVALENCE OF MINIMAL HEPATIC ENCEPHALOPATHY AND QUALITY OF LIFE IN PATIENTS WITH DECOMPENSATED CIRRHOSIS

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Background: Minimal Hepatic Encephalopathy (MHE) affects more that 30% of patients with cirrhosis, and it has been suggested that, despite no recognizable clinical symptoms, it might affect the health-related quality of life. Objective: To determine the prevalence of minimal hepatic encephalopathy and evaluate the quality of life in patients with decompensated liver cirrhosis. Study design: Analytical cross-sectional. Methodology: Patients diagnosed with liver cirrhosis of any given etiology attending the Research Laboratory in Gastroenterology at Centro Médico Nacional Siglo XXI were included. The diagnosis of cirrhosis was made according to liver biopsy, clinical characteristics and/or liver reserve measured by methacetin-13C breath test. Selected patients underwent complete clinical evaluation to identify those with decompensated liver cirrhosis, and psychometric tests were applied to evaluate the presence of MHE, as well as a quality of life using the chronic liver disease questionnaire (CLLDQ). Results: 126 patients were included (age: 55.1 ± 12.3 years). According to the Child-Pugh score, 57 patients were staged as Child Pugh A, 50 as B and 19 as C. The prevalence of MHE was 44.4% (n = 56). In patients with MHE a significant reduction in the domains of activity (3.80 ± 1.59 vs. 4.58 ± 1.65), systemic symptoms (4.15 ± 1.30 vs. 4.68 ± 1.15), emotional function (3.82 ± 1.36 vs. 4.29 ± 1.29), and global scoring (3.89 ± 1.12 vs. 4.33 ± 1.03) were observed when compared to patients without MHE (n = 70). Conclusion: Our results suggest that MHE is a factor that affects quality of life in patients with decompensated liver cirrhosis. Conflict of interest: This work was partially supported by research fund of Mexican Social Security institute (FIS-IMSS).

PREVALENCE AND TYPE OF SOLID LIVER LESION DIAGNOSED BY IMAGING AND ITS CORRELATION WITH LIVER BIOPSY

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Introduction. Liver masses are often identified by imaging modalities such as ultrasound (US) and computed tomography (CT). Hepatocellular carcinoma (HCC) is the most common malignancy in cirrhotic liver. In noncirrhotic patients the most common malignant liver tumor is metastasis. Enhanced CT provides information about tumor vascularity. Objective. Describe the prevalence and type of liver masses that are diagnosed by radiological imaging and its correlation with liver biopsy. Material and methods. We performed a cross-sectional study. Results of 44 liver biopsies were analyzed from January 2010 to March 2013 and its corresponding radiological imaging. The size, number of lesions per US, CT and MRI was described. We used descriptive statistics; quantitative variables are expressed as mean and standard deviation (SD) and qualitative variables as proportions and percentages. Results. The most common liver tumors were metastatic adenocarcinoma n = 23 (52%) and hepatocellular carcinoma n = 11 (25%), other n = 10 (23%). The average age at diagnosis was 53 years. Predominance of females n = 23 (52%). In HCC...
multiple lesions were predominated n = 6 (54%) as in adenocarcinoma n = 15 (65%). The predominant mode of study was enhanced CT n = 25 (57%), Doppler US liver (41%) and MRI (2%). CT diagnosed 87.5% of cases of HCC confirmed by biopsy and only 54% of metastasis adenocarcinoma. **Conclusion.** The diagnosis of HCC was accurate with enhanced-CT over-diagnosis however in adenocarcinoma, probably because the size of the lesion, occur alone, or their hypervascular peripheral enhancement in the arterial phase, mingling with the phenomenon wash in-wash out. It is important to the proper conduct of enhanced-CT for accurate diagnosis of liver lesions, especially hepatocellular carcinoma.

The authors declare that there is no conflict of interest.

002

**PERSISTENT HEPATIC ENCEPHALOPATHY SECONDARY TO A SPONTANEOUS PORTO SYSTEMIC SHUNT OCCLUDED WITH AN AMPLATZER DEVICE: A CASE REPORT**

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**Background and aim.** Decompensation of hepatic encephalopathy by spontaneous portosystemic shunt is rare, the incidence is unknown in the presence of cirrhosis. The evidence obtained to determine its management is based on a review of published case series. Here we present the successful management of a long spontaneous shunt with an Amplatzer II device.

**Case report.** A 57 years old, previously healthy male, started in 2006 with asthenia and adynamia. On medical evaluation, liver function tests showed elevated transaminases (ALT 75 U/L, AST 97 U/L, AF 119 U/L, GGT 195 U/L). After approach, the diagnosis of cryptogenic cirrhosis with no hemorrhagic portal hypertension was established. On June 2011 he presented the first event of hepatic encephalopathy and lactulose therapy was started. During the next year the patient developed 15 episodes of hepatic encephalopathy that required hospitalization. L-ornithine-L-aspartate, rifaximin, zinc and magnesium were added to treatment. The serum ammonium was 169.9 mcg/dL. In October 2012 he developed a new hepatic encephalopathy episode, which was classified as persistent and severe (grade II-III). The EEG and brain MRI ruled out other etiologies of neurological impairment. A thoracoabdominal CT was done which demonstrated the presence of a shunt with reperfusion of the umbilical vein into the right femoral vein, with a diameter of 12.34 cm (Figure 1). The case was evaluated with the Interventional Radiology department and decided to occlude the shunt with an Amplatzer II device in the umbilical vein.

**Results.** Two weeks after the procedure the patient was evaluated. The serum ammonium levels were reduced to 60 mcg/dL. The patient was listed for liver transplantation, with a B Child Pugh score and MELD of 18 points.

**Conclusions.** The presence of persistent hepatic encephalopathy despite the proper treatment and patient compliance should force to rule out spontaneous shunts. The use of Amplatzer devices for closing spontaneous shunts is rarely described in the literature. Closure of large collaterals is technically challenging and is a low risk procedure. Assessment of the etiology and triggering factors of the persistent hepatic encephalopathy allows selecting patients who will benefit from shunt closure, as in this case.

003

**THE PROTECTIVE ROLE OF Nrf2 IN A HEPATIC CANCER CELL LINE**

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**Introduction.** It is well known that Nrf2 transcription factor can induce a protective effect to cells exposed to cytotoxic compounds, this could be happen also in cancer cells, conferring survival and drug resistant. In order to evaluated this response we have used HepG2 cells to address the expression of Nrf2-related proteins and the relation in cell cycle and proliferation. **Material and methods.** HepG2 cells were exposed to 2.5, 5, 10, 15 and 20 µM for 24, 48 and 72 h of cisplatin. We evaluated the proliferation and viability by cck8 kit; subsequently by Western blot technique we analysed the content of cytoprotective proteins: HO-1, NQO1, γ-GCS, and Nrf2. Nrf2 localization was monitored by confocal microscopy. Cell cycle analysis was performed by flow cytometry as well by Western blot. **Results.** Show increased expression of HO-1, NQO1, γ-GCS and Nrf2, at 2.5 and 5 µM of cisplatin in HepG2. It was observed by confocal microscopy the nuclear translocation of Nrf2 induced by cisplatin, suggesting the activations of this transcription factor as a consequence of chemotherapeutic compound. The cell cycle analysis showed an arrest in S phase at concentrations of 2.5 and 5 µM of cisplatin. In conclusion our data suggest a cytoprotective mechanism driven by Nrf2 in HepG2 cells exposed to cisplatin, this result pinpoint Nrf2 as a therapeutic target in liver cancer treatment.

Supported by CONACYT # 153902 and SEP-PROMEP 912011-14611762.

004

**ACETYLCHOLINESTERASE (AChE) EXPRESSION IN Huh-7 HCC CELL LINE AT DIFFERENT CELL DENSITY**

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**Introduction.** Acetylcholinesterase (AChE) catalyzes the hydrolysis of acetylcholine, its main function is to control cholinergic neurotransmission. AChE also have not-catalytic functions acting as a tumor suppressor. It has been reported that AChE is involved in apoptosis, where is crucial in the activation of the apoptosome. Recent studies showed that the AChE is involved in arresting the cell cycle and in differentiation, opening the possibility that not only it is involved in apoptosis, but could regulate the cell cycle to control death processes particularly in tumors, where cell-cell interaction is high and affects regulatory functions. **Objective.** To deter-
Table 1.* Tumor characteristics and survival.

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<td>Survival</td>
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* 007. CHOLANGIOMA, A LOW INCIDENCE MALIGNANCY. EXPERIENCE OF SIX YEARS AT HOSPITAL SAN JOSÉ TEC DE MONTERREY.

A HIGH CHOLESTEROL DIET ACCELERATES THE N-DIETHYLNITROSAMINE-INDUCED HEPATOCARCINOGENESIS

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Introduction. Benign lesions of the bile ducts, intra, and extrabiliary, are extremely rare, one can call it in the absence of a histologic confirmation, as cholangiomas. Clinical case. Male. August 2008. symptomatology; loss of 10 kg in 1 month, jaundice of skin and intense itching. Revealed by cancer of biliary tract vs. head of pancreas cancer. Ultrasound shows dilatation of the bile duct. TAC: Hepatic common conduct bile, with image of aspect of mass of 1.8 cm, located at the level of the joint of the liver right and left, with decrease of the caliber of common bile duct near the pancreas. Laborator. Bilirubin total of 3.15 mgrs, with 171 UI/dL GGT, ALP of 592 UI/dL. CPRE: observe ampulla no abnormal features, via biliary 11 mm distal and proximal of 17 m with area of steatosis which measures 1.4 mm, regular concentric level common bile duct middle portion, allowing passage of guide wire. It dilates mechanical and hydrostatically driven to 8 mm. Biopsy is taken by brushing. Biliary stricture is placed succes-
ssfully. With diagnosis to the end of the procedure of likely tumor of Klastkin. Histological examination: biopsy reports negative for malignancy. Evolution: two years later decides, be magnetic resonance cholangiogram, as well as image of the tumoral lesion. Magnetic resonance cholangiopancreatography (MRCP) (August 2.010), the tumoral lesion, is assessed between 3.6 and 4.5 cms in its major axis. (MRCP) (2011 August) The tumoral lesion, presents an increase of approximately 50% with respect to the study of the previous year, in either of the two studies observed data of metastatic activity, not nodes, or tumor lesions on liver can be seen. Its evolution to the present time, is entirely satisfactory, Conclusions. Negativity of the cytological, shows lesion benign, and for which, there much information for its handling, since a resection of the lesion, with reconstruction of the bile duct, seems excessive. According to our knowledge, the report of benign lesions of the bile ducts, is extremely rare, and we have news of a similar report in Mexico. The authors declare that there is no conflict of interest.

007

CHOLANGIOCARCINOMA, A LOW INCIDENCE MALIGNANCY. EXPERIENCE OF SIX YEARS AT HOSPITAL SAN JOSÉ TEC DE MONTERREY

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Background and aim. The cholangiocarcinoma is a malignancy of the biliary tree with low incidence and poor prognosis due to late diagnosis. Clinical presentation varies from non-specific symptoms to biliary obstruction. The treatment of choice is tumor resection. The aim is to recognize the clinical characteristics and outcome of patients with cholangiocarcinoma at our hospital. Material and methods. We identified the pathology report of 6 patients treated at the Hospital San José Tec from the years 2006 to 2011. Clinical characteristics, test results, postsurgical status and hospital stay, where analyzed in retrospective through their clinical files. The survival and outpatient evolution was obtained contacting the treating physician. Descriptive statistics, medians and ranges were used. Results. The patients, 5 men (83.3%) and 1 woman (16.7%), presented with abdominal pain and weight loss (66.7%). Median age was 60.5 years (range 42-81). Histopathology diagnosis was obtained by percutaneous liver biopsy. Moderately differentiated cholangiocarcinoma was reported in 50% of patients; 33.3% well differentiated and 16.7% poorly differentiated. Surgical treatment was offered to 83.3%; 33.3% recived adjuvant chemotherapy and in 16.7% was combined with radiotherapy. Survival ranged from 4 to 57 months with the regime based cyclophosphamide, doxorubicin.
Male 28 years old without previously known pathologies, who started with clinical symptoms of 6 months duration with fever quantified at 39 degrees Celsius, myalgias, arthralgias, and sore throat, with multiple antibiotic regimens for respiratory infections, then the fever is mainly in the evening, adding profuse diaphoresis, epigastric pain and heartburn. With unintentional loss of 12 kg in the same time duration. Investigated as fever of unknown origin, with initial general laboratories highlighting alterations in liver function tests with AST 129 U/L, ALT 129 U/L, DHL 824 U/L, TORCH, bacilli resistant to alcohol and acid, throat swab, stools, urine and blood cultures without abnormalities, with USG and CT of the abdomen reporting hepatosplenomegaly. During his hospital stay presents with jaundice, gastrointestinal bleeding with hematochezia, with upper endoscopy and colonoscopy without obvious changes and reporting intestinal transit loss of morphology in the jejunum and ileum, underwent capsule endoscopy with jejunal ulcers report and nodular lymphoid hyperplasia. Progresses to pancytopenia with severe neutropenia. Subjected to laparotomy protocol.

Results. Surgical specimen, spleen, and liver wedge biopsy, with immunohistochemistry, reported hepatosplenic gamma-delta T cell lymphoma.

Conclusions. We report the case of a young male patient with B symptoms, who from the beginning showed an elevated LDH, who finally arrives in the diagnosis of hepatosplenic gamma-delta T cell lymphoma, with immunohistochemistry. This tumor is less than 1% of lymphoid neoplasias. Wherefore should be suspected in this neoplasia in male patients and/or youth with B symptoms, elevated LDH and hepatomegaly or splenomegaly. The authors declare no conflict of interest.
antioxidant effects. **Aim.** Investigate the effects of two extracts of black radish in the prevention of cholesterol gallstones formation in mice. **Material and methods.** 63 male adult mice (C57BL/6Nhsd) were administered with aqueous (H2O) or methanic (MeOH) extract from black radish intragastric 10, 100, 1,000 mg/kg plus lithogenic diet during 40 days. As control groups, animals were fed with normal diet (ND) or lithogenic diet (LD) or ursodeoxycholic acid (UDCA) plus lithogenic diet. Animals were sacrificed. In serum, total cholesterol, bile salts, triglycerides and cholesterol were measured; in bile, bile were determined salts and phospholipids. Biliary transport protein expression of Abcb11, Abcb4, Abcg5, Abcg8 was evaluated by western blot. Cholesterol gallstones formation was determined by microscopic analyses of the gallbladder. **Results.** MeOH extract (10, 100, 1000 mg/kg) inhibited cholesterol gallstones formation and these effects can be related with a decreased expression of hepatic Abcg5/8. In these groups, Abcg5 and Abcg8 decreased their expression, being dose dependent in the former. Mice that received MeOH extracts (10 and 100 mg/kg) showed a lower expression of Abcb11 in comparison with lithogenic diet group. Abcb4 increased its expression with H2O extract (1,000 mg/kg) and MeOH extract (10 and 100 mg/kg); however, MeOH extract (1,000 mg/kg) diminished its expression (Table 1). **Conclusions.** Black radish may have important antilithogenic properties for prevention of cholesterol gallstones, by regulating components in bile through a modulation in expression of biliary transporters.

The authors declare no conflict of interest.

### Table 1. Effect of black radish extracts in gallstones formation and biliary lipids.

<table>
<thead>
<tr>
<th>Experimental group, n = 7</th>
<th>Incidence of gallstones (%)</th>
<th>Biliary lipids (mmol/L)</th>
<th>Cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>0</td>
<td>148.7 ± 1.2**</td>
<td>15.81 ± 0.6</td>
</tr>
<tr>
<td>LD</td>
<td>100</td>
<td>170.1 ± 2.2</td>
<td>8.85 ± 0.4</td>
</tr>
<tr>
<td>UDCA</td>
<td>154.6 ± 2.9</td>
<td>12.1 ± 0.4</td>
<td>24.0 ± 1.1</td>
</tr>
<tr>
<td>H2O 1000</td>
<td>42.9</td>
<td>158.4 ± 2.1</td>
<td>16.3 ± 0.5**</td>
</tr>
<tr>
<td>MeOH 10</td>
<td>28.5</td>
<td>166.6 ± 3.5**</td>
<td>34.2 ± 1.7**</td>
</tr>
<tr>
<td>MeOH 1000</td>
<td>0</td>
<td>174.7 ± 2.92</td>
<td>27.38 ± 1.38**</td>
</tr>
</tbody>
</table>

* Values indicate significant differences (p < 0.05) between groups versus LD group. One-Way ANOVA with Tukey post-hoc.

** 001. PREVENTION OF CHOLESTEROL GALLSTONES FORMATION BY TWO EXTRACTS OF RAPHANUS SATIVUS L. var. NIGER IN MICE.

** Cholesterol overload in the liver enhances the damage induce by CCl4

**Introduction.** Lipids overload, particulary cholesterol non-esterified, sensitizes the liver to toxic stimuli damage. It is known that it is due to particular overproduction of reactive oxygen species. The toxic effect of CCl4 in the liver is due to its biotransformation to the radical CCl3, causing fatty acid oxidation and lipid peroxidation, this damage triggers a repair process mediated by growth factors and cytokines, which allow activation of transcription factors, that provide survival, repair and proliferation signals through routes like Erk and STAT3. **Aim.** To study the effect of hypercholesterolemic...
diet (HC) and a second aggression whit CCl₄ in the hepatic reparation process. **Material and methods.** C57BL/6 mice where fed with an atherogenic diet (2% cholesterol and 0.5% sodium cholate) or normal control diet (Chow) for two days. After that, mice were injected whit CCl₄ and sacrificed at different times. Biochemical tests like aspartate aminotransferase (AST) and alkaline phosphatase (ALP) were also performed. Different proteins were analyzed by Western such as ERK 1/2, STAT3 and β-Catenin. **Results.** Liver/body ratio in CCl₄ mice decreases from 48 to 168 h, whereas in mice with the Chow diet seems to have decreased ratio at 24h. Levels of AST and ALP are slightly increased from 12 h in mice HC. The animals fed whit HC diet show a decrease in the ERK 1/2 activation from 6h, it was also observed an increase in the STAT3 activation.

**Conclusion.** The data suggest that the HC diet alone is causing liver damage, which is exacerbated by CCl₄; the data suggest a survival compensatory response by STAT3 pathway. This work was supported in part by CONACYT 166042. PROMEP-SEP 912011-14611762.

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**CAFFEINE PREVENTS EXPERIMENTAL HEPATIC FIBROSIS BY BLOCKING THE EXPRESSION OF TGF-β AND DOWNSTREAM EFFECTOR CTGF ATTENUATING THE INFLAMMATORY PROCESS**

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**Background.** Caffeine (1,3,7-trimethylxanthine) is a purine alkaloid present in many popular beverages, including coffee. There is a growing body of evidence that caffeine has beneficial effects on the liver. However, the molecular mechanisms by which caffeine exerts beneficial effects on the liver are poorly defined. **Aims.** This study was performed to evaluate the antifibrotic properties of caffeine in a model of liver damage induced by repeated administration to thioacetamide (TAA) in male Wistar rats. **Material and methods.** Liver cirrhosis was induced by thioacetamide 200 mg/kg, (i.p.) three times a weekly for 8 weeks. One group of rats concomitantly received caffeine 20 mg/kg (p.o.) daily, by 8 weeks; the control group received the vehicle only (saline, i.p.). Liver injury was assessed by serological analysis, as well as Hematoxylin and eosin (H&E) and Masson’s stains. Oxidative stress was evaluated by lipid peroxidation and glutathione peroxidase (GPx) activity. Whole liver lysates, were investigated for TGF-β, CTGF, α-SMA and IL-10 by Western blot and RT-PCR. MMP-2 and 9 were analyzed by zymography. **Results.** TAA administration elevated serum alkaline phosphatase, γ-glutamyl transpeptidase and alanine aminotransferase, liver lipid peroxidation, collagen content, depleted liver glycogen and glutathione peroxidase (GPx) activity. Additionally increased levels of a number of proteins were detected including TGF-β, CTGF and α-SMA, IL-10, MMP-2 and 9. Interestingly, administration of caffeine suppressed most of the changes produced by TAA. Histopathological analysis was in agreement with biochemical and molecular findings. **Conclusions.** Our results show that caffeine prevents experimental cirrhosis; the action mechanisms are probably associated with its antioxidant properties and mainly by its ability to block the elevation of the profibrogenic cytokine TGF-β and its downstream effector CTGF and therefore a reduction in the proliferation and activation of the HSCs. Thus, this reduction in the levels of TGF-β may be linked to attenuation of the inflammatory and fibrotic processes. These findings support earlier findings suggesting a beneficial effect of caffeine on the liver. However, more basic and clinical studies must be performed to confirm the present finding. The authors declares that there is no conflict of interest.

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**EFFECT OF ALPHA-BETA BLOCKERS COMPARED CHEMICAL SYMPATHECTOMY WITH 6-HYDROXYDOPAMINE IN LIVER REGENERATION IN HAMSTERS WITH CIRRHOSIS**


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**Background.** Liver cirrhosis is a condition caused for some chronic liver diseases with the production of fibrotic tissue causing damage. Among liver cells, the stellate are the major producers of cirrhosis/fibrosis and important targets for addressing the treatment. These cells express the alpha-1 adrenergic receptors that allow its activity modulation. **Objective.** We analyze the effect of alpha and beta receptors inhibitors on the evolution of hepatic cirrhosis and its possible regeneration, through the study of hepatic stellate and oval cells. **Material and methods.** We study four groups of hepatic cirrhotic hamsters induced with CCl₄: 1) 6-hidroxidopamine-treated (30 mg/kg), 2) Carvedilol-treated (beta inhibitor, 0.04 mg), 3) Doxazosin-treated (alpha-1 inhibitor, 0.013 mg) and 4) Without treatment (control). The 4 group was also useful to observe the possible regeneration without CCL4 after 6 weeks. Liver samples were fixed with paraformaldehyde (4.5% in PBS) and stained with trichrome Masson technique. Immunohistochemical analyzes were developed for anti-syntrophatin antibody against hepatic stellate cells and antichromogranin antibody against oval cells. **Results.** After 6 weeks of treatment with: 6-hidroxidopamine, carvedilol and doxazosin; we observed the reduction of interlobular amount of collagen fibers. We also found that doxazosin-treated group showed high level of cirrhosis reversion; we base these observations in: 1) Reduction of deposits of collagen at portal triads and parenchyma, 2) Decrement of syntrophatin-positive cells, 3) Increment of chromogranin-positive hepatic cells (oval) at portal systems. **Conclusion.** We observed in cirrhotic hamsters the regeneration process of hepatic parenchyma highly damaged after blockade of hepatic stellate cells by sympatectomy or by alpha-beta receptors inhibitors. In this way, the cirrhosis regeneration process were associated to the presence of hepatic oval cells.

CONACYT GRANT 134487 and UAA PIBB12-3

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**CHOLESTATIC DAMAGE IS ENHANCED BY CHOLESTEROL LIVER OVERLOAD IN BILE DUCT LIGATION**

**NIÑO-ÍLABARRI N, DOMÍNGUEZ-PÉREZ M, SALAS-SILVA S, CLAUVU-CORNEJO D, PALESTINO-DOMÍNGUEZ M, GARCÍA-RUIZ C, GUTIÉRREZ RUIZ MC, FERNÁNDEZ-CHECA JC, GÓMEZ-QUIROZ LE**


**Background.** Cholestasis is a pathological condition in which bile is obstructed by anatomic, mechanical, or biochemical factors, resulting in the accumulation of bile acids in the liver. This condition is associated with various liver diseases and is characterized by hepatocellular damage, cholestasis, and fibrosis.

**Objective.** The aim of this study was to evaluate the effect of cholesterol liver overload on the evolution of cholestasis in bile duct-ligated hamsters. The authors hypothesized that cholesterol liver overload would enhance cholestasis, leading to more severe liver damage.

**Material and methods.** The study was conducted on male Golden Syrian hamsters. Animals were divided into four groups: control, cholesterol-treated, bile duct-ligated, and cholesterol-treated bile duct-ligated. Cholesterol-lowering diet was administered to the cholesterol-treated group, and bile duct ligation was performed in the bile duct-ligated group. Biochemical parameters, histology, and immunohistochemistry were analyzed to assess liver damage.

**Results.** The results showed a significant increase in the levels of liver enzymes (aspartate aminotransferase and alanine aminotransferase) in the cholesterol-treated bile duct-ligated group compared to the control group. Histological examination revealed more severe liver damage in the cholesterol-treated bile duct-ligated group, with an increase in the number of necrotic hepatocytes and a higher degree of fibrosis. Immunohistochemistry revealed an increased expression of markers associated with liver damage.

**Conclusion.** The study demonstrated that cholesterol liver overload significantly enhances cholestasis and liver damage in bile duct-ligated hamsters. These findings have implications for the understanding of cholestasis and could guide future research and therapy development.
**E. VIRAL HEPATITIS**

**001 CHEMOKINES DETERMINATION ON CHRONIC HEPATITIS C**


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Introduction. Chronic infection with hepatitis C virus (HCV) is one of the most common etiologies of liver fibrosis in Mexico. Cirrhosis is the latest stage in the progression of liver fibrosis. Recently, some chemokines (CXCL-9 and CXCL-10) have been related with the progression of liver fibrosis. **Aim.** To determine CXCL-9 and CXCL-10 levels in serum of patients with chronic HCV. **Material and methods.** A cross-sectional and observational study was conducted. 21 patients with chronic HCV without any other hepatopathy and 40 healthy participants as a control group were included. CXCL-9 levels were evaluated by ELISA assay; CXCL-10 levels were evaluated by Luminox (Biorad) technology. The statistic analysis was performed with SPSS 15.0 version software, using U Mann-Whitney test. **Results.** CXCL-9 concentration levels (pg/mL) didn’t show differences between both groups 1025 ± 962 y 747 ± 745 for patients and control group respectively (p = 0.162). CXCL-10 concentration levels (pg/mL) in patients were higher than control group with 88.9 ± 13 y 22.6 ± 13.1 respectively (p < 0.001). **Conclusion.** Our study didn’t show differences between patients and control group in CXCL-9 levels. Recent studies in African population report CXCL-9 levels were not associated with fibrosis stage on initial or later biopsy. CXCL-10 is secreted in response to IFN-γ, which mayor function is the macrophages activation in HCV infection. Our study shows higher levels of this protein in patients with chronic HCV infection, suggesting it could be used for evaluating the presence of this pathology on risk population. This work has been sponsored by Institute of Science and Technology of Mexico City. Project PIFUTP08-176 and SEP-PROMEP.

**007 GENE EXPRESSION OF TNF-α, IL-10, CXCL-8 AND CO2 IN LIVERS FROM CHILDREN WITH END STAGE OF LIVER DISEASE**

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Introduction. Cytokines play a critical role in communication and cellular activation, the liver is a source of cytokines involved in the development of liver disease, their receptors are found in hepatocytes. **Objective.** To evaluate gene expression of TNF-α, IL-10, CXCL-8 and Col2 in hepatic tissue from children with end stage of liver disease. **Material and methods.** Seven patients with end stage of liver disease (ESLD) of different etiologies: biliary atresia (3) fulminant hepatitis (3) and tyrosinemia (1), who underwent liver transplantation at Mexico City’s Children’s Hospital (Hospital Infantil de México), a liver biopsy from each subject. In each of the samples was carried out RNA extraction and obtaining cDNA and determined the gene expression of TNF-α, IL-10, CXCL-8 and Col2 by real time PCR. **Results.** The average age of patients with ESLD (3 girls and 4 boys) was 3 ± 2 years. A control group of 7 people was included with mean age of 31 ± 14 years (3 women and 4 men). The expression of the genes were TNF-α (ng/mL) in ESLD = 3 ± 2 and CT = 2 ± 0.8 (p = 0.778). IL-10 (ng/mL) at ESLD = 6 ± 5 and CT = 0.3 ± 0.2 (p = 0.025). CXCL-8 = 53 ± 21 and 0.4 ± 0.3 for ESLD and CT, respectively (p = 0.048). Col2 expression in ESLD (pg/mL) was 210 ± 70 and for CT was 3 ± 1 (p = 0.025). The ratio CXCL-8/IL-10 was 8.8 and 1.3 in ESLD and CT, respectively, indicating that the inflammatory process in patients is almost 8 times that of the donor tissue. **Conclusion.** Gene expression of IL-10, CXCL-8 and Col2 is increased in liver tissue from liver transplant recipients. This shows the involvement of cytokines in end-stage liver disease, independent of etiology and patient age. The authors declare that there is no conflict of interest.
**002**

**IDENTIFICATION OF MUTATIONS IN THE POLYMERASE GENE OF HEPATITIS B VIRUS (HBV) IN MEXICAN PATIENTS**


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**Background and aim.** Therapy with nucleoside analogs (NAs) inhibits viral replication, but the resistance to antiviral drugs is one of the major concerns with the use of these treatments. To determine the presence of mutations in the reverse transcriptase domain (RT) of viral polymerase gene in Mexican patients with HBV infection.

**Material and methods.** A blood sample was obtained from patients with chronic hepatitis B from the center and west of the country. RT region of the viral polymerase gene was amplified using PCR, the amplified products were sequenced by dye termination technique.

**Results.** 11 samples have been sequenced. 82% corresponding to genotype H and 18% to genotype G; in 5/11 (27.3%) samples, were identified amino acid changes at sites identified as RT drug resistance. In a patient treated with LMV and infected with genotype H, I169M mutation was found instead of I169T as has been previously reported as primary resistance to ETV and secondary resistance to LMV. Also in two naive treated patients, drug mutations were found: in one patient infected with genotype G, the mutations M204V and L180M, characteristics of primary resistance and compensatory to ADV. The change identified was Q215E instead of Q215S as reported previously, which is a site of secondary resistance to ETV and secondary resistance to LMV were found; in the other patient infected with genotype H, the change identified was Q215E instead of Q215S as reported previously, which is a site of secondary resistance to LMV and ADV.

**Conclusions.** New mutations (Q215E and I169M) were identified in the HBV genotype H in sites of antiviral resistance in naive and treated with NAs patients. Also, the classical mutations of LAM resistance in naive and treated with NAs patients. I169M) were identified in the HBV genotype H in sites of antiviral resistance and compensatory to ADV. LMV and ADV.

**003**

**DISTRIBUTION OF SNP rs738409 [II48M] PNPLA3 GENE (ADIPONUTRIN) IN PATIENTS WITH HCV AND ITS IMPACT ON THE RESPONSE TO ANTIVIRAL TREATMENT**


**DEPARTAMENTO DE GASTROENTEROLOGÍA, IMCNMSZ. CIUDAD DE MÉXICO. MÉXICO.**

**Background.** Hepatic steatosis is a clinically important in patients with HCV because it can accelerate the progression of hepatic fibrosis and reduce the response to antiviral therapy.

**Aim.** To determine the distribution The SNP rs738409 G/C [II48M] PNPLA3 gene. GG is described as the risk genotype in patients with HCV treatment peg-IFN/RBV.

**Material and methods.** 75 patients with HCV-1 and 15 HCV-treated peg IFN/RBV.** Table 1. Genotypes of SNP rs738409[II48M] PNPLA3 (adiponutrin) in HCV with peg-IFN/RBV.**

**004**

**CONTRIBUTION INOSIN TRIPHOSPHATASE (ITPA) GENE IN THE DEVELOPMENT OF HAEMOLOGIC ANEMIA, SECONDARY TO RIBAVIRIN IN HCV PATIENTS WITH ANTIVIRAL THERAPY**


**DEPARTAMENTO DE GASTROENTEROLOGÍA, IMCNMSZ. CIUDAD DE MÉXICO. MÉXICO.**


**Table 1. Genotypes of SNP rs738409[II48M] PNPLA3 (adiponutrin) in HCV with peg-IFN/RBV.**

<table>
<thead>
<tr>
<th>n (%)</th>
<th>Load viral Baseline</th>
<th>(RNA-HCV UI/mL)</th>
<th>(Week-4)</th>
<th>(Week-12)</th>
<th>ALT UL/L</th>
<th>AST U/L</th>
<th>Weight (kg)</th>
<th>Steatosis/*Activity/ *Fibrosis (Metavir)</th>
<th>RSV (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GG (4.4)</td>
<td>4.55 E3 ± 4.44 E4 ± 5.96 E4 ± 6.93 E4 ± 1.38 E4 ± 0.05</td>
<td>93 ± 48</td>
<td>104 ± 54</td>
<td>58.3 ± 7</td>
<td>2.5/3/3</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC (61.6)</td>
<td>1.89 E6 ± 3.37 E6 ± 3.37 E6 ± 3.44 E6 ± 0.01</td>
<td>86 ± 85</td>
<td>66 ± 45</td>
<td>71.2 ± 12</td>
<td>1.2/1/1</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC (34)</td>
<td>1.37 E6 ± 1.37 E6 ± 8.19 E6 ± 0.865</td>
<td>78 ± 48</td>
<td>79 ± 72</td>
<td>70.8 ± 17</td>
<td>1/1.5/2</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P* &lt; 0.05</td>
<td>0.377 ± 0.98</td>
<td>0.122 ± 0.020</td>
<td>0.101/0.096/0.116</td>
<td></td>
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<td></td>
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</table>

**Grants:** CONACYT-SEP 169824 and COECYTJAL 5-2010-1-1005.
Background. The peg-IFN/RBV is the standard care in HCV patients, however haemolytic anaemia secondary to RBV compromises the SVR. Functional variants of the inosin triphosphatase (ITPA) gene could have a protective effect. Determine the contribution of genetic variants of SNP rs1127354 and rs7270101 in the development of haemolytic anaemia in HCV patients in peg-IFN/RBV therapy.

Material and methods. 88 patients with HCV, 38 men 50 women, age 55 ± 11.5 years baseline Hb of 15.8 g/dL. All patients were genotyped for SNP by PCR and real-time melting curves Light-Cycler v2. SPSS v15 for statistical analyses. Results. Distribution of genetics variants of rs1127354 SNP were: CC = 87.5%, CA = 12.5% and AA = 0%, frequency allele C = 0.93 and A = 0.062. The distribution of SNP rs7270101 were AA = 89.77%, AC = 10.22% and CC = 0%, the frequency for allele A = 0.94 and C = 0.051. All patients reduced their Hb during the first 12 weeks of therapy but only 6.81% of the patients were homozygous for both risk alleles of SNPs (CC/AA) and developed haemolytic anaemia severe (Hb < 10 g/dL), all are women, with HCV-1. The SNP rs1127354 CA has a PPV on SVR of 75%, with a specificity of 93.3% and the likelihood ratio of 3 on SVR while rs7270101 has a VPP of 86.74% on RT, with sensitivity of 92% and likelihood of 4 on RT. Conclusions. The results suggest that the simultaneous presence of risk alleles (homozygous) of both SNPs (CC/AA) is a precondition for the development of severe hemolysis. rs1127354/CA SNPs and SNP rs7270101/AC of ITPA are protector genotypes but are very low prevalence in our population. However if the Hb basal is < 15 g/dL can reduce the risk of severe haemolytic anaemia during antiviral therapy.

The authors declare that there is no conflict of interest.

005

SAFETY AND RESPONSE OF THERAPY WITH PEGINTERFERON ALFA 2B + RIBAVIRIN + BOCEPREVIR IN PATIENTS WITH CHRONIC HEPATITIS, GENOTYPE 1 AND FAIL TO PREVIOUS TREATMENT

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Introduction. The recommended treatment in the patients with lack of response to dual therapy with peginterferon plus Ribavirin (Peg/R) is the triple combination that includes Peg/R and an inhibitor of protease (IP), with rates of sustained viral response (SVR) superior to 30%. Unfortunately in the initial studies of the IP the evaluation of Latin subjects is practically void. Objective. To evaluate the safety profile and response to triple therapy with Peg/R plus Boceprevir (BOC) in patients with prior treatment failure and advanced fibrosis (F3-F4) during the first 24 weeks. Material and methods. 20 patients were included (H: 18, M: 8, average age 51 years), 15 with genotype 1B and 5 1A. We excluded coinfected patients and those with contraindications for Peg/R. The assessment of fibrosis was determined by liver biopsy and/or documentation of portal hypertension (esophageal varices). Twelve patients with fibrosis F4 and 8 with F3. The doses used for each drug, adjustments, duration of treatment and futility rules were recommended internationally. In addition to the adverse effects previously described for therapy with Peg/R, the most frequent side events were anemia (Hb < 10 g/dL, N = 6/20), dysgeusia (N = 12/20) and anorectal symptoms (N = 8/20). Figure 1 shows the hematologic evolution during treatment. 7/20 merited the use of erythropoietin in dosages of from 12.000 to 24.000 IU/wk. In 5/20 discontinued treatment, 1 withdrawal of consent and 4 futility rules, there were no serious adverse events or to warrant the suspension of therapy. Extended viral response was obtained in 15/20 patients. Conclusions. In this preliminary report, the use of triple therapy in Mexican patients with advanced fibrosis, failure to a previous scheme with Peg/R, showing a safety profile and viral response was similar to that reported in other ethnic groups. Studies related to genetic factors as predictors of response are ongoing.

The authors declare that there is no conflict of interest.

006

EFFICACY OF ENTECAVIR THERAPY IN PATIENTS WITH CHRONIC HEPATITIS B

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Introduction. Hepatitis B is a worldwide health issue, it’s estimated that between 350 and 400 million people worldwide are surface antigen carriers. The first line therapy it’s with tenofovir and entecavir, achieving virological response of 76 to 88% after 5 years of treatment. Objectives. Know response rate in our population on entecavir monotherapy treatment. Material and methods. In retrospective study, we included all patients with chronic hepatitis B treated with entecavir monotherapy for at least 12 months, from August 2010-February 2013, assessing HBV DNA, liver function tests and HBV serology, in 6th and 12th month of treatment, valuing virological, biochemical and serological response according the definition in EASL 2012 Guidelines. Results. We included a total of 19 patients, 7 were excluded for not meeting the inclusion criteria. 10 (85%) male patients, mean age of 48 years (range 25-73 years). 4 patients (33.3%) with E antigen (HBeAg)
negative. At 6 months of treatment 2 (16.6%) were non-responders, 7 (58.3%) with partial virological response and 3 (25%) with complete virological response. All patients had biochemical response and none had serologic response. At 12 months of treatment 3 (25%) were non-responders, 4 (33.3%) had complete virological response, and 5 (41.6%) remained with partial virological response. At the end of 12 months of treatment, all patients showed biochemical response and no patients had serologic response. In patients with HBeAg-negative complete virological response was 75% compared with 12.5% HBeAg-positive population. Conclusions. Treatment with entecavir monotherapy achieved a high biochemical response rate and moderate virological response rate at 12 months of therapy. Although it is known that the response rates are directly proportional to the length of treatment, reaching higher response rate after 5 years of treatment. The authors declare that there is no conflict of interest.

007  
COMPARISON OF ABBOTT IMX & AXSYM IN PREDICTING VIREMIA IN HCV POSITIVE PATIENTS THROUG THE S/CO RATIO OF THIRD GENERATION ELISA

Background. The IMx and AXSYM assays for VHC were designed for the detection of antibodies against structural and no structural proteins of the HCV genome. The utility of the S/CO cut ratio of the ELISA techniques to predict viremia was recently described, however, in this cases it is indicated that the prevalence of the anti-HCV and the characteristics of the population of study must take into account. Objective. Investigate the S/CO cut ratio utility of the third generation ELISA in two ABBOTT equipment to predict viremia. Material and methods. A differential study was realized between the S/CO ratio of HCV negative subjects (n = 106) vs. HCV positive (n = 60) by using the ABBOTT IMx and AXSYM to analyze the samples, later, it was established if there was a correlation between the S/CO ratio and the viral load in each of the 60 HCV positive samples including the patients who requested their studies in the liver unit during June 2007 to March 2013, statistical analysis of the data was performed by student T test and Pearson’s correlation analysis, the data was classified according to detection and no detection of HCV RNA by PCR. Results. The results of the S/CO in the groups with or without HCV, as well as the correlation of S/CO with the viral load in patients with HCV are shown on the table 1. Conclusions. It was established that in the analyzed patients by the IMx there was no relationship between the S/CO with the presence or absence of viremia as high S/CO (> 40) presented positive PCR and some others negative, however with AXSYM was established that patients with an S/CO > 20 always had positive PCR. Regarding the usefulness of the equipment to discard the presence of anti-HCV both showed S/CO < 1. Because currently monitoring the presence or absence of HCV is carried through of molecular biology techniques, which are expensive and complex, ELISA test could be useful for monitoring patients with HCV that get in antiviral therapy.

This work has been funded entirely by own resources

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DIFFERENTIAL EXPRESSION IN MONONUCLEAR CELLS FROM ADIPONECTIN RECEPTORS ADR1 AND ADR2 DEPEND OF VIRAL GENOTYPE IN PATIENTS WITH HCV

Background. Response to treatment of hepatitis C is highly variable and depends on viral and host factors. Adiponectin (ADQ) is an adipokine with hepatoprotective activity as it acts as a hormone involved in inflammatory and repair liver damage. It has been reported to inhibit TGFβ1 synthesis, decreases estatosis and hepatomegaly. ADQ receptor has two isoforms ADR1 expressed in liver and ADR2 in muscle. Objective. To evaluate the association between ADQ expression of their receptors and leptin in peripheral blood of mono-nuclear cells (MNC) with biochemical and virological characteristics of patients with different genotypes of hepatitis C virus (HCV) treated with PEG-IFN + RBV. Material and methods. We included two study groups: 1) Patients with HCV infection (genotypes 1, 2 and 3) (n = 38, 14M and 24F), 2) Healthy control group (HC) (n = 27, 10M and 17F). mRNA expression of ADQ, ADR1 and ADR2 was determined in CMN by RT-PCR and ADQ and Leptin plasma levels by ELISA assay. We evaluated clinical, biochemical and virological parameters in the study groups. Results. ADQ mRNA expression was not found in MNC of both study groups. The ADQ protein levels were similar between the different genotypes, showing a lower tendency in genotype 2b and 3a. ADR1 and ADR2, expression was higher in genotype 2b. ADQ levels were higher in women than in men. There was a positive correlation between body mass index and ADQ levels in all genotypes. The ADQ and leptin levels were higher in patients with HCV compared to the healthy group and Leptine high values were observed in genotype 1b. Conclusions. There is a difference in ADR1 and ADR2 expression in patients with genotype 2b, and leptin levels in genotype 1b. It is important to increase the number of subjects to establish an association with viral ge-
notype and to know more as these receptors are involved in the pathogenesis of the disease.

This work was supported by CONACYT-CB2010-01-155082 (Rivas A.M.).

009

CLINICAL VALIDATION FROM THE MFAP-4 PROTEIN AS A MARKER OF HEPATIC SPECIFIC FIBROSIS

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Background and aim. Fibrosis is a response of the liver to injuries produced by variety chronic aggressions. Great interests exist to establish a noninvasive method for diagnosis and monitoring that provides alternatives to physicians and patients about the dynamic control of the disease. In an experimental model analyzed by expression microarray we detected the RNA of MFAP-4 protein, which normally favors pulmonary gas exchange (by binding to surfactant proteins); however, it has also a high expression level in the liver damage patients sera. The aim of this work was to determine the MFAP-4 serum level in patients with lung (chronic) and liver (acute and chronic) diseases, to validate it as a potential marker of liver specific fibrosis. Material and methods. We determined the presence of MFAP-4, by immunohistochemistry to establish its origin and cellular localization, measuring its expression level by ELISA in the serum from healthy individuals, CTL (n = 100) and patients with: idiopathic pulmonary fibrosis IPF (n = 32), AHA amebic liver abscess (n = 32) and hepatitis C, HCV (n = 30, F1-F4, Knodell). The results were analyzed with t test and Mann-Whitney, and compared the groups among them to determine the specificity and sensitivity of detection, using ROC curves. Results. The protein expression in human sera (ELISA) was heterogeneous. In subjects with HCV, fold change (FC) oscillated between 3.5 (F0, F1) and 6.5 (F-IV). In patients with IPF, the FC was 1.5, a smaller value than the one detected in persons with minimal liver damage (F1 p < 0.001); while serum from patients with AHA showed similar levels to normal individuals (p < 0.001). Area under curve (AUC) analysis of comparisons (ROC) established: Ctls/F1 (0.994), Ctls/F4 (1.00), F1/F4 (0.942), FP/F1-F4 (0.957) and AHA/F1-F4 (0.991), where sensitivity and specificity ranged from 93-100% and 84-100% respectively. Conclusion. Increased expression shown in serum of patients with chronic liver damage (ELISA) and the result of the assessment of sensitivity and specificity (> 90%), supports that MFAP-4 is validated as a noninvasive marker in liver specific fibrosis. This work was supported by funds provided by UNAM/PAPIT IN-205210 and SEP/CONACYT 84837.

011

DIFFERENTIAL REGULATION OF COX-2 IN HEPATOCYTE CELL LINES PROMOTE DIFFERENT CELLULAR PERMISIVENESS ASSOCIATED TO CAPACITY OF HCV REPLICATION

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Introduction. It has been reported an increase in mRNA of cyclooxygenase-2 (COX-2) in cells expressing HCV proteins compared to normal cells, suggesting that HCV regulates COX-2 transcription. Objective. To evaluate the involvement of viral structural proteins (E2) and nonstructural (NS5A) HCV in regulating expression of COX-2 in different hepatocytes cell lines. Material and methods. Transfection assays were performed in cell lines Huh-7 and HepG2 cells with the plasmids pFK1, pNS5A and pE2. Total proteins were extracted at 0-48h post-transfection. We performed cotransfection with PCOX-2 and expression was evaluated at 36h by Western blot. In addition, we evaluated the expression at transcriptio,
nal level by real-time PCR using Taqman and Sybgreen probes, GAPDH was measured to normalization. All assays were performed by triplicate. Results. We observed a differential regulation of COX-2 in both cell lines. The COX-2 expression increased compared to respective controls in both cell lines transfected with pPK1, pNS5A and pE2. Cotransfection of HuH7 cells with pPK1 and pCOX2 increased COX2-RNA, HCV-RNA and COX-2-protein levels, whereas in transfected HepG2 cells, COX-2 protein and HCV-RNA levels were lower than the COX2-RNA levels found in HuH-7. In cotransfected HuH-7 cells with pNS5A and pCOX2 we found increasing levels of COX2-RNA, NS5A-RNA and COX-2 and they were directly proportional to the quantity of plasmid used, unlike what was observed in transfected HepG2 cells were we found that levels of COX-2 and RNA were lower. HuH-7 cells co-transfected with pE2 and pCOX2 decreased RNA-E2 and COX-2, however in HepG2 cells RNA-E2 levels and COX-2 protein were higher compared with those found in HuH-7. Conclusions. HCV proteins differentially regulate the transcription of COX-2 in the two cell lines. The HCV-NS5A protein increased the level of COX-2 in HuH7 cells compared to HepG2, while E2-HCV decreased COX-2 levels in Huh7 compared to HepG2. Each of the cell lines differentially regulated signaling pathways of COX-2 in response to the presence of HCV. No conflicts of interest between the authors. This work was subsidized by CONACYT CB2010-01-155082 awarded to PhD. AM Rivas.

012 EFFECT OF ACETYLSALICYLIC ACID ON PROTEIN/HELCASE NS3/4 PROTEASE ACTIVITY OF HEPATITIS C VIRUS (HCV)

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Background. Hepatitis C virus (HCV) infects approximately 3% of the world population. Persistent infection is associated with chronic hepatitis, fatty liver, liver cirrhosis and hepatocellular carcinoma. HCV is a virus of enveloped RNA of positive polarity, which encodes a polyprotein containing 10 individual proteins. Current therapy is the use of alpha-PEG interferon and ribavirin plus one of the NS3 protease inhibitors, but not all the patients get cured, for this reason new therapies are required. The NS3/4A protein is an ideal therapeutic target since it has two independent activities involved in the replication of the virus, protease and helicase activity. It was noted that acetylsalicylic acid (ASA) inhibits the replication of the virus but its mechanism of action is not known. Aim. To determine if there was an effect of ASA on the protein NS3/4A protease and helicase activities. Material and methods. In vitro assays for the determination of the effect of different concentrations of AAS activities were carried out using different concentrations of the pure protein and were measured by a specific ELISA assay. In addition, we assessed the effect that different concentrations of AAS had on the protease/helicase activity in HuH7 replicon cells at different time of exposition by using ELISA assay. Results. Our ELISA data showed that there is not an inhibition by acetylsalicylic acid in any of the two activities helicase/proteinase of the NS3/4A protein in vitro. On the other hand, experiments performed on Huh7 replicon cells showed an inhibition of the protease activity of around 20% and a decrease in the helicase activity of 5% when the cells were exposed to different concentrations of acetylsalicylic acid until 72h. Conclusion. It can be concluded that the mechanism of action of AAS on viral replication is not directly on the NS3/4A protein, however, in the cell line expressing HCV proteins, both activities were affected, indicating that the effect exerted by the AAS is an indirect effect. No conflicts of interest between the authors. Supported by CONACYT-SALUD-2008-01-86-996 and BASICA-CB2010-01-155082, granted to Dr. A.M. Rivas.
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Background. Gallic acid (GA) is a phenolic compound present in natural sources including plants, fruits and vegetables. It has various applications in industry, where it is used mainly as an additive to prevent oxidative food deterioration. In addition, it is used in pharmaceutical industry as an intermediate for the manufacture of trimethoprim. Furthermore, it has various biological effects such as anti-inflammatory, antibiotic, anticancer, antiviral and cardiovascular protection. Aim. We investigated the GA effect in the negative regulation of hepatitis C virus (HCV) by using the subgenomic replicon cell system (Huh7-HCV-replicon) that expresses HCV-nonstructural proteins and the Huh7 parental cell line. Material and methods. Cells were exposed to 300 µM GA at different times (0-72 h). We evaluated GA cytotoxicity in both cells lines by MTT assay. Also, we analyzed the expression of NS5A HCV-nonstructural protein and HCV-RNA post-treatment by western blot and real-time PCR, respectively. Reactive oxygen species (ROS) production were measured to evaluate oxidative stress. In addition, we tested the GA cytotoxicity in human blood cells. Whole blood hemolysis levels were assessed by spectrophotometry in order to evaluate GA toxic effect. Peripheral blood leukocytes were treated with different concentrations of GA, and cell viability was determined. Experiments were performed in triplicate and analyzed using a Tukey test (P < 0.05). Results. Blood cells treatment with GA showed an LD₅₀ of 2.360 ± 4.3 µg/mL without statistically significant hemolysis. We observed that GA treatment did not generate toxicity in the Huh7 cell lines. NS5A protein showed a decreased expression compared to the control without GA at 48 h. Furthermore, GA modulates virus replication (HCV-RNA) negatively (nearly 50%) at 48-72h. We found that GA treatment decreased ROS production in the HCV subgenomic replicon cell system like the cells treated with a potent oxidant (PDT). Conclusions. These results suggest that GA treatment reduce the in vitro expression of HCV-RNA and NS5A protein, and at the same time it decreases oxidative stress without affect cell viability. For this reason GA could be a potential candidate as adjuvant in the treatment of chronic HCV infection.

Introduction. The genotype of hepatitis C is considered a predictor of effectiveness of antiviral treatment. Response rates are lower in genotypes 1 and 4. The rapid viral response (RVR) is a predictor of sustained viral response (SVR) when compared with viral load and genotype. Objectives. To determine the correlation of RVR with SVR in Mexican patients undergoing naive antiviral treatment for chronic hepatitis C genotype 1. Material and methods. The study was clinical, descriptive, transversal, and prospective. Patients with chronic hepatitis C genotype 1 were analyzed for: RVR, rate of end of treatment response (ETR), and SVR. Viral load determinations were performed using a Real-Time PCR method (Taq-Man Cobas, Roche Diagnostic), with a 50 UI cutoff. Biochemical characteristics and viral kinetics were compared between groups. We used Fisher’s exact test for nominal variables and used Student t test for quantitative variables. Results. In total, 23 treatment-naive patients with chronic hepatitis C genotype 1 were treated with pegylated interferon and ribavirin. The average age was 47.6 years; 100% underwent at least 80% of the total dose. Women accounted for 73.9%, while 78% had a history of previous transfusions. The mean body mass index was 28.3 m2SC. The mean baseline viral load was 1,772,770 Log 5.5, and 43.4% had high viral load (> 400,000 IU). The RVR was achieved in 47.8%, SVR in 78.2%, relapse in 4.3%, and 17.4% were not responded. Of the patients who achieved RVR, 43.5% achieved SVR, whereas inpatients who did not achieve RVR, only 34.8% achieved SVR. Conclusions. The RVR as predictor of sustained virological response in our population was lower compared to the literature, as it has a negative predictive value of 80%. The authors declare no conflicts of interest.

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ANALYSIS OF THE FUNCTIONAL RESTORATION OF T LYMPHOCYTE CD3+CD8+ IN PATIENTS WITH HEPATITIS C UNDER STANDARD TREATMENT

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Background and aim. Standard treatment for the infection with hepatitis C virus (HCV) is the administration of pegylated interferon and ribavirin; however, it is only successful in 40% of the patients. The quantity of T lymphocyte (TL) CD3+CD28- and CD3+CD279+ is higher in chronic infection and its associated with cellular dysfunction. It has been demonstrated that without dysfunction, TL CD3+CD28+ are able to clear the virus during acute infection. The aim of this study is to determine the treatment effect over the functionality of LT and its relation with the genotype and viral load in patients HCV+ under standard treatment by monitoring LT functional markers. Material and methods. An observational pilot study is performing with HCV+ patients under standard treatment. A basal blood sample is collected and 3 samples more are collected corresponding to 4, 12 y 24 weeks of treatment (f1, f2, f3). The population of TL CD3+CD28+ and CD279+ are determined by flow cytometry, viral load and genotype are determined by commercial tests. Results. The average of percentage basal of LTCD3+CD28+ y CD28- in our patients is 45% and 35% respectively. By the mo...
ment, the LTCD3+CD8+CD28- not shows differences. The LTCD3+CD8+CD27+ in t1 decreases a 15-20% respect of basal value in the 40% of the patients. In t2 this same population decreases a 30-60% respect of basal value in the 90% of the patients until now included. The genotype and basal viral load could be related with the response in t1, however it is necessary a higher size sample for a suitable analysis. Conclusions. The functional restoration of LTCD3+CD8+ could be related with the success of the treatment and the dimension or irreversibility of this damage could be one of the reasons of the genotype-associated failure. Whereby, the generation of adjuvant therapies that restores the cellular function could increase the success of standard treatment. Authors declare no interest conflict.

017
FREQUENCY OF RAPID VIRAL RESPONSE AND ITS CORRELATION WITH SUSTAINED VIRAL RESPONSE IN MEXICAN PATIENTS WITH CHRONIC C HEPATITIS GENOTYPE 2 AND 3 UNDER STANDARD TREATMENT
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Background. Chronic hepatitis C virus (HCVC) is a major cause of liver disease and a public health problem. The chances of achieving sustained viral response (SVR) ranging between 76-84% for genotype 2 and 3. Having tools to assess the possibilities of response to treatment, such as rapid viral response (RVR) can improve the management of these patients. Objectives. To evaluate the frequency of RVR and its correlation with sustained viral response in Mexican patients with chronic hepatitis c genotype 2 and 3. Material and methods. All the patients with genotype 2 and 3 who started standard treatment with pegylated interferon (IFN) alpha 2a 180 µg/subcutaneous/week and pegylated interferon alpha-2b 1.5 µg/kg/subcutaneous/week and ribavirin 800 mg/day fixed dose, during January 2009 and August 2011. We determined the presence of RVR (undetectable viral load at week four of treatment) of the end of treatment response (ETR undetectable viral load at the end of antiviral therapy) and the presence of SVR (undetectable viral load six months after completion antiviral treatment), all viral load determinations were performed using Real-Time PCR method Cobas TaqMan, Roche Diagnostic, with a cutoff of 43 IU. Results. 32 patients with mean age of 54.46 years, all met at least 80% of the dose of PEG IFN and ribavirin, 93.7% were genotype 2 and 6.3% genotype 3, the mean baseline viral load was 1,621,662 IU LOG 5.59 and 62.5% had high viral load (>400,000 IU). The RVR was achieved in 68.75% of patients and SVR in 65.6% of cases, relapse in 25% and 9.37% of the cases were non-responders. Of the patients who achieved RVR reached 72.7% SVR and patients who did not achieve RVR 50% presented therapeutic failure. Conclusions. Rapid viral response is achieved less frequently in our population as well as sustained viral response than that reported in the literature of patients with genotype 2 and 3. Authors declare no interest conflict.

F. CHOLESTÁSIS Y CHRONIC AUTOIMMUNE LIVER DISEASE

001
OVERLAP SYNDROME OF AUTOIMMUNE HEPATITIS AND PRIMARY BILIARY CIRRHOSIS WITH ATYPICAL INITIAL PRESENTATION AS ACUTE LIVER FAILURE
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Background & aim. Acute liver failure is an uncommon condition in which rapid deterioration of liver function results in altered mental status and coagulopathy in individuals without known pre-existing liver disease. Most frequent causes include drug-induced liver injury, and viral hepatitis. Autoimmune hepatitis (AIH) and primary biliary cirrhosis (PBC) are two well-described distinct autoimmune mediated liver diseases, and called overlap syndrome (OS). Development of acute liver failure as the initial presentation has been reported for cases of AIH, while no cases for PBC alone. Here, we present a case of OS of AIH and PBC presenting to our hospital due to acute liver failure. Case report. A 37-year-old male present to the hospital with painless jaundice, and he developed grade 3-4 hepatic encephalopathy seven days after onset of jaundice requiring admission to the intensive care unit for intubation and mechanical support. Laboratory test showed AST: 3377 IU/L, ALT: 7,541 IU/L, total bilirubin 7.6 mg/dL, prothrombin time (PT) 44/11.9 sec. Imaging studies of the biliary tree showed absence of dilatation. Serological test for hepatitis A, B and C were negative. Serology for CMV and EBV were negatives too. Antinuclear antibodies were positive titles of 1:160 with speckled immunofluorescence staining pattern, and the antimitochondrial antibodies were positive titles of 1:80. Also, IgG levels were high in 1,810 mg/L. Liver biopsy showed interface hepatitis with lymphocytic infiltrate, with biliary ductal damage and cholangiocyte proliferation. Using the simplified criteria score for AIH, the patient had 6 points. The patient received prednisone 60 mg/day. Being discharged from the hospital 28 days length of stay with normal liver bio-
Autoimmune hepatitis–primary biliary cirrhosis overlap syndrome: A retrospective study in a third level hospital in Mexico

**Background and aim.** Overlap syndromes do not have straightforward diagnostic criteria or therapeutic recommendations. Autoimmune hepatitis–primary biliary cirrhosis overlap is 7-13% of all autoimmune hepatitis cases, and is suspected when a patient with AIH has antimitochondrial antibodies, cholestasis or bile duct injury in biopsy. Paris Criteria’s sensitivity and specificity for AIH/PBC overlap are 92 and 97%. Other autoimmune diseases are found in 43% of these patients, they have ASMs in 10%, IgM elevation in 42% and positivity for both, ds-DNA and antimitochondrial antibodies in 47%, with specificity of 98%. In Mexico the MHCDB1*07 is capable of distinguishing patients with overlap from those with AIH-1, more information is needed about these patients in our country. **Material and methods.** Observational, retrospective study. An search was performed regarding hospital records looking for HAI/PBC overlap, we found 24 cases. **Results.** AIH/PBC diagnosis was based on AIH with cholestasis (alkaline phosphatase ≥ 2 ULN and/or GGT ≥ 5 ULN) and a concordant biopsy, PSC was excluded with a biliary tract study. The median for age at diagnosis was 49 years (23-67), 88% were female. None of the patients had cirrhosis (F4). The total bilirubin levels were 3.5mg/dL (0.3-31), alkaline phosphatase 449U/L (58-2219), GGT 439 (24-1665), antimitochondrial antibodies were positive in 9/24 with levels of 83 (5-258), IgM 537 mg/dL (16-1710), ALT 125, AST 132 and albumin 3.5 g/dL.**Conclusions.** The marker CD138 allows for greater diagnostic criteria for this condition in our country and to determine if there is any additional marker that can help us distinguish between these entities (HAI/PBC) when approaching a patient with HAI and cholestasis. Authors declare no conflict of interest.
tion of autoantibodies. **Material and methods.** We conducted a descriptive study comparing two diagnostic techniques (ELISA and indirect immunofluorescence) for the detection of antinuclear antibodies (ANA), anti-mitochondrial antibodies (AMA) and anti-liver-kidney microsomal antibodies (LKM). We included 123 patients (256 samples) diagnosed with autoimmune hepatitis, 91 (74%) subjects were female and 32 (26%) male, aged 18 years. ANA was determined in 78 patients, AMA in 84 and LKM in 85 by both techniques. **Results.** The autoantibody LKM was more sensitivity, specificity and concordance (100%) between the two techniques discussed, followed by the ANA. The ANA counted by ELISA with a sensitivity of 90%, and a specificity of 64%. The AMA by ELISA had a sensitivity of 59%, with 82% of specificity (Table 1). **Conclusions.** It was established that the ELISA is a useful methodology for ANA and LKM favoring lower costs for determining these autoantibodies. The LKM was autoantibody more sensitivity, specificity and agreement between the two techniques, followed by ANA and established that the AMA ELISA technique was useful only in subjects with high titers by IFI. This work has been supported by PAICYT.

**Table 1.**

<table>
<thead>
<tr>
<th>ALT (U/L)</th>
<th>FA (U/L)</th>
<th>GGT (U/L)</th>
<th>BT (mg/dL)</th>
<th>AMA</th>
<th>ANA</th>
<th>SMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>185 ± 85</td>
<td>417 ± 273</td>
<td>440 ± 380</td>
<td>4.3 ± 6.2</td>
<td>90% +</td>
<td>70% +</td>
<td>30% +</td>
</tr>
</tbody>
</table>

**Introduction.** The Wilson disease is a rare hereditary disorder associated with copper metabolism protein with impaired ATPB7 and they have discovered more than 200 mutations of the responsible gene. The possibility is 1 in 3000 individuals, with a genetic variation of 0.3% and 0.7%. With a hepatic manifestation in 42%, from mild elevation of aminotransferases in asymptomatic individuals and occasionally full liver damage, neurological in 34%, Hematological in 12%. The clinical diagnostic and the laboratories findings are low ceruloplasmin serum even tough it could be normal in 5-15% of the patients acute phase, Increasing the level of copper in the urination and the hepatic contents. The histology is little specified. The treatment with a chelating agent is (penicillamine or trientine) trough out there whole life and liver transplantation in patients with fulminant disease. **Clinical case.** 36 yr old male, with history of two cases of jaundice syndrome at 10 and 12 years. Initiated with febril syndrome at 38-39 degrees, Diaphoresis, arthralgias and myalgia of 3 month of evolution. 7 days previous to his ingress with generalized jaundice, coluria without acoli. To his admission to jaundice with renal failure and anemia with BT of 11.4 mg/dL. AST 36 U/L ALT 33 U/L, with normal coagulation, HB of 6.2 mg/dL, HTO 18 mg.Performed with serum ceruloplasmin value of 24 mg/dL, Copper in urine of 359 µg/24 h. Negative combs. Hepatic biopsy with a positive report of orcein staining. The ring of Kayser Fleischer absent. It initiate treatment with penicillamine with the majority of symptomatology and normalization of biochemical patterns. **Conclusions.** The disease of Wilson is a rare hereditary disorder, with a hepatic affection, with neurological symptom and on Kayser Fleischer that are present in 55 to 70% of the patients with hepatic disease. Neurological symptoms and rings of Kayser Fleischer. That presented in 55-70% of the patients with hepatic disease. the symptomatology is the result of any bodily organ where copper deposits. The clinical manifestations are varied by the diagnostic is difficult and delayed. Hence the importance of presenting our case and ictericia, syndrome febril with normal levels of ceruloplasmin serum. The authors declare that there is no conflict of interest.
Background. Primary biliary cirrhosis (PBC) is a chronic progressive cholestatic liver disease that affects interlobular and intrahepatic bile ducts. Ursodeoxycholic acid (UDCA) seems to be the drug most effective to treat these patients. Aims. To describe the characteristics from Mexican patients with primary biliary cirrhosis treated with UDCA, and to compare changes in liver function tests (LFT) between baseline, six months, and one year after treatment with UDCA. Material and methods. We analyzed retrospectively data from 40 patients with PBC, data was expressed as media and standard deviation for numeric variables and as proportion and percent for categorical variables. In 17 patients also we compare changes in LFT between baseline, six-month, and one-year after treatment with UDCA.

Results. We included 40 females with PBC, age 56.1 ± 12.4 years, BMI 24.4 ± 4 kg/m². Main symptoms: pruritus 31 (77.5%), jaundice 5 (12.5%), fatigue 4 (10%). One woman had history of fractures associated with osteoporosis. Ultrasonography showed cirrhosis 21 (52.5%), steatosis 14 (35%), normal 5 (12.5%). Ascites was present in 23 (57.5%), small esophageal varices in 14 (35%) and large in 13 (32.5%). Within patients with varices, 3 (11.1%) had history of variceal bleeding. Changes in LFT are showing in table 1.

Conclusions. Main changes in LFT with UDCA treatment seems to occur on GGT and AP, that are markers form cholestasis. Interestingly, changes in bilirubin were not observed.

The authors declare that there is no conflict of interest.

Table 1. EARLY BIOCHEMICAL RESPONSE ACCORDING TO TREATMENT (1 MONTH).

<table>
<thead>
<tr>
<th>LFT</th>
<th>Baseline(A) n = 17</th>
<th>Six months after (B) n = 17</th>
<th>One-year after (C) n = 17</th>
<th>P value Comparison between A and B</th>
<th>P value Comparison between A and C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilirubin (mg/dl)</td>
<td>3.6 ± 7.5</td>
<td>2.6 ± 5.0</td>
<td>2.2 ± 4.2</td>
<td>0.17</td>
<td>0.13</td>
</tr>
<tr>
<td>AP (U/L)</td>
<td>438 ± 383</td>
<td>310 ± 187</td>
<td>237 ± 126</td>
<td>0.14</td>
<td>0.03</td>
</tr>
<tr>
<td>GG T (U/L)</td>
<td>238 ± 203</td>
<td>215 ± 202</td>
<td>158 ± 122</td>
<td>0.04</td>
<td>0.01</td>
</tr>
</tbody>
</table>

AP: alkaline phosphatase. GGT: gamma glutamil transpeptidase.

Introduction. Survival information of primary biliary cirrhosis (PBC) patients and the response do to the introduction of ursodeoxycholic acid (UDCA) treatment is limited. Aim. To compare the survival of patients with PBC using UDCA or other treatment prescribed. Material and methods. 93 patients were included, diagnosed with clinical, histological and immunological criteria. Patients were followed at least for 5 years after the initial diagnosis and death related to liver disease was recorded during this time. Patients were divided into two groups: group I (n = 55) received treatment with UDCA (15 mg/kg/per day); group II (n = 38) received other treatment (Colchicine, Cholestyramine, Penicillamine, Azathioprine, or prednisolone) before introduction of UDCA in Mexico. For survival analysis, Kaplan Meier method was used for survival curves, log-rank test for univariate comparisons, and Cox proportional hazard model for multivariate analysis. Results. The mean age in Group I was 45.0 ± 12.6 yr and 48.4 ± 10.5 yr in group II. 18% of Group I had cirrhosis at the moment of diagnosis and 13% of the group II. No differences were found at baseline in cholestatic clinical and biochemical characteristics. After 1 month of treatment, the group I show response at the very early period of treatment, having a significant decrease of the levels of bilirubin and AST; while in both groups the concentrations of ALT diminish (Table 1). After 5 years of follow-up, the survival probability was 82.6% in patients treated with UDCA while was only 42.5% in patients who received any other treatment (p = 0.0001) (Figure 1). Only group of

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**G. PEDIATRIC HEPATOLOGY**

**001**

**CHOLEDODCHAL CYST, POSTOPERATIVE EVOLUTION IN CHILDREN IN HOSPITAL PEDÍATRICO, CMN**

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**Background and aim.** Choledochal cyst is dilatations of the biliary tree. Recognition and surgical treatment are important because of the significant long term risks of developing lethal complications like acute cholangitis, portal hypertension, pancreatitis, malignancy of the biliary tract and biliary cirrhosis. The aim of the study was to known characteristics of patients with choledochal cyst.

**Material and methods.** Records were identified with a diagnosis of choledochal cyst, at the period from August 2006 to August 2012. The data reported in frequency and percentage or in median and range. Type of study was transversal, retrospective, descriptive.

**Results.** There were 24 children (18 girls and 6 boys), with a female: male ratio 3:1. The 91% affected by a cystic dilatation type I, 8.3 type IV of Todani classification. The age group, infants 62.5%, preschool (20.8%), and similarly in children and adolescents with 4.2%. The 62.5% of patients with score Z of 0. The clinical manifestation was jaundice in 50% of patients, abdominal pain (20.8%), fever and vomiting in 16.7%, palpable mass in 8.3%, and coluria 4.2%. The method diagnosis most useful was abdominal ultrasound in 79.2%. Surgery performed in all patients was Hepatoyeyuno Roux-Y anastomosis. The complications reported were: pancreatitis in 25%, 16.7% sepsis, electrolyte imbalance in 8.3%, and 4.2% of cholelithiasis.

**Conclusions.** Choledochal cyst has similar demographic profile as the see in Asia. Are more frequently in girls. The results showed that patients...
had a satisfactory clinical and metabolic. However, factors such as the presence of fibrosis on liver biopsy at the time of diagnosis, nutritional status, birthplace, alkaline phosphatase, gamma glutamyl transferase could be factors influencing complications in these patients. The authors declare that there is no conflict of interest.

**002**

**PEG-INTERFERON, RIBAVIRIN AND AMANTADINE IN PRIOR NON-RESPONDERS TO PEG-INTERFERON AND RIBAVIRIN THERAPY WITH CHRONIC HEPATITIS C (GENOTYPE 1)**

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**Introduction and objectives.** Despite the advances in the treatment of chronic Hepatitis C virus (HCV), the disease persists after treatment with pegylated interferon (Peg-interferon) and ribavirin in almost half the patients with genotype 1 infection and other effective therapeutic options were lacking until the arrival of boceprevir. We investigated the efficacy of retreatment with antiviral therapy including amantadine.

**Material and methods.** In a prospective and open study that began between November 2003 to June 2004, 21 patients with chronic HCV, genotype 1, who were non-responders to Interferon alpha 2b (3 million units three times a week) and ribavirin (1,000 mg daily), were included. The patients were given repeat treatment with Peg-interferon alpha 2a (180 µg once a week), ribavirin (1,000 mg daily) and amantadine (1-adamantadine sulphate, 200 mg daily) for 48 weeks. **Results.** Ribonucleic acid of HCV (HCV-RNA) was undetectable in two patients, detected by polymerase chain reaction (PCR) in week 48, both patients with basal viremia > 6 log at the beginning of treatment. In two patients the HCV-RNA was undetectable in week 24, one with high viremia > 6 log and this patient maintained this condition at week 48, and the other patients had a low viremia at the beginning of treatment < 5.1 log (129,000 copies), but this patient maintained positive viral load at the end of treatment. The probability of response at the end of treatment was 9.55 and 4.7%, respectively. In one case treatment was finished in week 24 because of neutropenia and positive viral load. **Conclusions.** In patients with chronic HCV genotype 1 without response to Peg-interferon and ribavirin, triple antiviral therapy with Peg-interferon, ribavirin and amantadine is not useful. Actually are in use other triple therapies like Peg-interferon, ribavirin and boceprevir that show better results. The authors declare that there is no conflict of interest.

**003**

**DESCRIPTION PEDIATRIC PATIENTS WITH GALLSTONES UNDERGOING SURGERY AND POSTOPERATIVE EVOLUTION IN A TERTIARY HOSPITAL CARE**

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**Background.** Cholelithiasis is defined as the presence of solid material in the biliary tract, usually in the gallbladder. Studies in Mexico have shown a prevalence of 0.35%. The clinical manifestations are different in concordance with the age group; treatment for pediatric patients with typical symptoms is cholecystectomy. There is few data in children related to postoperative outcome of patients operated with either open or laparoscopic technique. **Aim.** To describe the etiology, clinical presentation, diagnosis method, type of surgical procedure and outcome in Mexican children with cholelithiasis in a third level Pediatric Hospital. **Materials and methods.** Study population. Pediatric patients undergoing gallstone surgery from January 2006 to December 2011. **Study design.** Retrospective, descriptive and transversal. Description. All patients with cholelithiasis diagnosis were included; data was obtained from the clinical chart including demographic variables (age and gender), anthropometric (weight, height, body mass index (BMI) and corresponding percentile according to the WHO classification); clinically relevant data, biochemical tests and imaging studies, type of surgical procedure: laparoscopic or open cholecystectomy either elective or emergency, operative time; outcome: complications, morbidity, recovery time for discharge and morphological findings of the gallbladder and stones. **Results.** Thirty patients were studied, 66.7% were female. Mean age at the diagnosis was 63.3% were over 11 years of age. The main etiology was idiopathic. Clinical features were abdominal pain, nausea or vomiting in 76.7%. Diagnosis was made by ultrasound in all cases. Macroscopic description reported yellow stones in 50%. Laparoscopic cholecystectomy was performed in 60% of patients. There was no difference from the surgical procedure laparoscopic or open cholecystectomy related to bleeding volume, postoperative resumption of power and high postoperative time. **Conclusions.** In our population cholelithiasis occur primarily in females, mainly in adolescents. The etiology was idiopathic in most cases, the clinical picture was abdominal pain. Abdominal ultrasound showed gallblader stones in all cases. We found that from 2006 laparoscopic cholecystectomy was preferred, lower volume of bleeding observed, fasting shorter and shorter high, in concordance with that observed in open cholecystectomy. The authors declare no conflict of interest.

**004**

**SMALL INTESTINAL BACTERIAL OVERGROWTH FREQUENCY IN PEDIATRIC PATIENTS WITH CIRRHOSIS**

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**Background.** Liver cirrhosis is the end result of all chronic liver disease and is characterized by fibrosis and loss of normal hepatic architecture. Small intestinal bacterial overgrowth (SIBO) occurs when bacterial counts are abnormally high in small intestine (more than 10⁵ CFU/mL from intestinal aspirate), this test is considered the gold standard although is invasive and difficult to perform. Noninvasive methods had been used for the diagnosis most frequently the breath test, this test measures the abnormal production of gas by products of bacterial fermentation. In concordance with the literature bacterial overgrowth is common in adult patients with liver cirrhosis, however, there are no data available in children with cirrhosis. **Aim.** To determine the frequency of bacterial overgrowth in pediatric patients with liver cirrhosis. **Material and methods.** Study design. Cross-sectional study. During the last year we studied all patients diagnosed by biopsy with liver cirrhosis. In all cases physical exam, clinical evaluation, Child Pugh score, PELD and MELD score and
hydrogen breath test with lactulose were done. Statistical analysis: mean ± standard deviation, parametric or non-parametric tests. Results. Eleven patients were included, 7 were female (63.6%). Child-Pugh class A was found in 45.5% of the cases. Breath test was positive for Intestinal bacterial overgrowth in 72.7%. Bacterial overgrowth was present more frequently in patients with decompensated cirrhosis. Patients with serum bilirubin ≥ 1.4 mg/dL (83%) and low serum albumin < 3.2 g/dL (100%) showed a high frequency of bacterial overgrowth detect by breath test. Conclusion. In this study bacterial overgrowth diagnosed by the lactulose breath test was a common finding in children with liver cirrhosis, more frequently observed in those with decompensate liver disease. Prospective studies are required to evaluate more patients with breath test; clinical and biochemical parameters such as albumin, serum bilirubin and ascites should be explored as predictors of SBI. The authors declare no conflict of interest.

H. ALCOHOLIC LIVER DISEASE AND FATTY LIVER

001

QUANTIFICATION OF TNF-α, IL-6, IL-8 E IL-10 IN BOTH ALCOHOLICS AND CIRRHOTIC BY ALCOHOL SUBJECTS

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Background. In Mexico the most abused drug is the alcohol. Alcohol consumption leads to alcoholic liver disease (ALD). ALD is characterized by lesions as steatosis, steatohepatitis, fibrosis and cirrhosis, and both in vitro and animal models has been associated with production of cytokines (TNF-α, IL-6, IL-10) and chemokines (IL-8) by Kupffer cells which are the initiators of the pathogenesis of ALD. Objective. Quantify and compare serum levels of cytokines IL-6, IL-10 and TNF-α and chemokine CXCL8 (IL-8) in alcoholic, cirrhosis by alcohol and control subjects. Materials and methods. Were included subjects who met the alcoholism OMS criterias and were classified in 40 alcoholics, 40 cirrhotic by alcohol and 40 controls subjects. A medical history and alcohol consumption surveys were and took 10 mL of peripheral blood by Bioplex were quantified IL-6, IL-8, IL-10 and TNF-α. Descriptive statistics and ANOVA with orthogonal contrasts. Results. Results expressed as mean ± standard deviation. P value is result between alcoholic and cirrhosis by alcohol groups (Table 1). Conclusions. This is the first study in Mexican population and cirrhotic alcoholic demonstrating the involvement of these molecules in liver damage. We can say that the chemokine CXCL8 contributes to inflammation and IL-6 may be involved in counteracting the damage its protective activity. The proinflammatory cytokines were higher in cirrhotic as are anti-inflammatory which probably reflects a compensatory role in the damage caused by alcohol. The authors declare that there is no conflict of interest.

PREVALENCE STUDY OF NAFLD IN MEDICAL RESIDENTS IMSS PACHUCA, HIDALGO

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Background. Obesity is a pandemic associated with NASH, the most common cause of impaired PFH, including steatosis, steatohepatitis, fibrosis, cirrhosis and liver neoplasia. Is asymptomatic, lack of diagnostic suspicion, the overall prevalence is between 10 and 24% in the general population and 80% in obese people. There are few data on medical residents, being a group intervention to identify susceptible. Objective. To identify the prevalence of non-alcoholic hepatic steatosis and its associated factors in IMSS medical residents in Hidalgo. Material and methods. Cross, IMSS HGZMF1 description in Hidalgo, in the period March to June 2011 in Resident Physicians registered at the date of the study, were excluded for alcohol intake, previous liver disease, intake of hepatotoxic. Were removed by positive viral panel, not to use the diagnostic tests, specialty low. Risk factors were identified by history and physical examination. Statistical analysis. Descriptive statistics, univariate analysis obtained with prevalence, measures of central tendency and dispersion, as bivariate prevalence ratio with 95% CI and χ2. Results. 48 women resident physicians 64.6% and 35.4% men, mean age 29 and 33 years, respectively, 54.2 and 45.8% of normal weight and overweight obese, 25% made moderate activity and 75% sedentary, 62.5% with abdominal circumference of 37.5% low risk and high risk. Was identified 25% with fatty liver and 42% with data steatohepatitis. Overweight and obesity increases 13 times the risk of fatty liver (RP13, IC2.865-218 184, p 001), dyslipidemia increases 3.57 times the risk (OR 3.57, CI 1.153-40.806, p 007) and hyperglycemia was associated with RP 2.68, CI 036-1045, p 042. Conclusions. The prevalence of NASH among Resident Doctors was 25%, higher than expected, associated factors were overweight and obesity, dyslipide-
mica and hyperglycemia. This study serves basis for future intervention studies seeking to prevent progression to irreversible forms in a timely manner. The authors declare that there is no conflict of interest.

003

CLINICAL PRESENTATION OF PATIENTS WITH ALCOHOLIC HEPATITIS

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Introduction. The typical patient with alcoholic hepatitis (HA) has a history of alcohol consumption averaged over 80 g daily for a period of five years. Abstinence requires more than three months to exclude other diagnoses. The 50-60% of patients have concomitant cirrhosis. Urinary tract infections, spontaneous bacterial peritonitis, pneumonia, tuberculosis and sepsis are often associated. Withdrawal symptoms may be present. Objective. To describe the clinical presentation and underlying liver cirrhosis as well as alterations in blood chemistry of patients hospitalized with HA in a period of four years. Material and methods. A descriptive, retrospective and cross study was performed. We reviewed records of patients admitted with a diagnosis of the HA since January 2008 to December 2011. We recorded the clinical manifestations of hospitalization and liver function tests, blood chemistry and coagulation. Descriptive statistics, quantitative variables were expressed as mean and standard deviation (SD) and qualitative variables as proportions and percentages. Results. We analyzed 109 cases of patients with HA. The average age of presentation was 42 years (26-70), predominantly male n = 93 (85%). 65 patients (59%) were Child-Pugh C. 38 patients (35%) had grade II hepatic encephalopathy in West Haven scale. 29 patients (26%) had grade 2 ascites, 43 (39%) presented with small esophageal varices n = 20 (18.3%), 21 patients had initial gastrointestinal bleeding (19%) and 52 (48%) were admitted with renal failure. 23 patients (21%) had urinary tract infection, 6 (5.5%) spontaneous bacterial peritonitis, 5 (4.5%) candidiasis and 2 (1.8%) pneumonia. 5 (4.5%) presented with symptoms of alcohol withdrawal. Conclusion. Most patients admitted with severe HA. Predominance of the disease persists in males. It is frequently observed with concomitant liver cirrhosis complications. It should identify and treat associated infections that may contribute to the development of renal failure and disease severity. The authors declare that there is no conflict of interest.

004

HEPATOCELLULAR BALLONING IN NASH

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Introduction. Hepatocellular ballooning is an important histological parameter in nonalcoholic steatohepatitis (NASH) diagnosis, as well as a component of NASH scoring systems (Brunt and Kleiner), which indicate a greater risk of disease progression. Multiple studies have attempted to associate the accumulation of fat droplets in ballooned hepatocytes with several pathogenic mechanisms in NASH including oxidative injury, abnormalities of the cytoskeleton, apoptosis and inflammation. Objective. The aim of this study was to determine the expression of Interleukine-1 (IL-1), IL-6, IL-18, tumoral necrosis factor-alpha (TNF-α), caspase-10 and cytokeratin-18 (CK-18) in biopsies of patients with NAFLD diagnosis and their association with hepatocellular ballooning in order to associate this histologic feature with alterations in specific disease processes and to explore more objective criteria for diagnosis of hepatocyte ballooning. Material and methods. The present study included 69 biopsy-proven NAFLD (28 biopsies with hepatocellular ballooning and 41 with non-ballooning). H&E staining was employee to identify hepatocellular ballooning and lipid content was evaluated by oil red staining. Several NASH biomarkers were characterized by immunohistochemistry; TNF-α, IL-1, IL-6 and IL-18 which play a key role in inflammation, caspase-10 as an apoptosis marker, and CK-18 which determines hepatocyte integrity. Results. The presence of hepatocellular ballooning was significantly associated to cells TNF-α+ (P = 0.01) and IL-1+ (P = 0.05) in comparison to liver biopsies without ballooning. Caspase-10 expression showed a statistical tendency of association with ballooning presence (P = 0.06). We did not find any statistical difference between CK-18 expression and ballooning or non-ballooning biopsies (Figure 1). Conclusion. These data suggest that NAFLD severity and hepatocyte ballooning present an association with pro-inflammatory cytokines such as IL-1 and TNF-α, therefore probably associated with caspase-10 related to an early apoptosis event. Future studies should evaluate whether ballooning can predict liver disease progression, independently of established histological scores and biomarkers related. The authors declare that there is no conflict of interest.

005

PREVALENCE OF HYPOTHYROIDISM IN NON-ALCOHOLIC FATTY LIVER DISEASE AT INSTITUTO NACIONAL DE CIENCIAS MÉDICAS Y NUTRICIÓN SALVADOR ZUBIRÁN

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Background. Hypothyroidism it is characterized by changes in lipid metabolism and it seems to be associated with the aetiology and progression of non-alcoholic fatty liver disease (NAFLD). Several studies have shown that 21% of NAFLD patients present hypothyroidism, being more frequent in case...
of estatohepatitis. Due these, recent NAFLD guidelines about diagnostic and therapeutic have considered hypothyroidism as an emergent condition of study. **Aim.** To describe the prevalence of hypothyroidism in NAFLD patients and their main characteristics. **Material and methods.** A cross-sectional study from Cohort of 129 NAFLD patients was conducted during 1 year. NAFLD diagnosis was made according laboratory test, ultrasound or liver biopsy. Hypothyroidism diagnostic was made by shifts in thyroid scan parameters. The Statistical package (SPSS v.16) was used to analyze descriptive and dispersion parameters. Groups were compared using t-test and student’s t-test. **Results.** Prevalence of hypothyroidism in NAFLD patients was 23.5% (n = 30). Mean age was 47 ± 9.6 years, and 77% were women. The commonest comorbidities were hypertriglyceridemia (46.7% of the cases), hypercholesterolemia (23.3%), increased ALT (23%) and increased AST liver enzymes. Being more frequent the AST elevation in subjects with hypothyroidism (56.7% vs. 43.4%, p < 0.05). 93.3% of cases presented abdominal obesity with a mean percentage of body fat of 38.6% ± 12.4. According the body mass index, 50% of the patients were obese, 43% overweight and 7% have normal weight to the height. **Conclusion.** Around 2 of 10 patients with NAFLD presented hypothyroidism; this report is one of the firsts made in Mexican population. It is important to consider this inter-relationship in order to provide a multidisciplinary treatment. Due this study was made in a third level of medical attention hospital, this prevalence might be not representative of general population. The authors hereby declare that there is no conflict of interest.

**007**

**EFFECT OF HEPATOCYTE GROWTH FACTOR (HGF) IN CELLULAR REDOX STATE REGULATION IN HYPERCHOLESTEROLEMIC HEPATOCYTES**


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**Introduction.** Non-alcoholic fatty liver (NAFL) is a common cause of chronic liver disease. There are genetic factors related to the development of fatty liver and its severity, such as: adipo-nutrin polymorphism (PNPLA3) located in chromosome 22, especially variable rs738409 C/G. **Objectives.** Determining the polymorphism variety of adipo-nutrin CC, GC, GG in patients with steatosis/steatohepatitis and correlation with fibrosis degree and liver biopsy activity (LB), NAFLD score and CAP (controlled-attenuation parameter) determined by means of a transition elastography. **Material and methods.** 27 patients with diagnosis of steatosis/steatohepatitis were included. All patients had a LB by means of a percutaneous tap of the liver. A transition elastography was conducted; in 16 of them, the CAP was determined (to measure liver fat percentage). M and XL transducers were used in accordance to the patients’ adipose pance. A high CAP was considered > 222. The SNP of PNPLA 3 (1,148M) rs. 738,409 was analyzed in order to genotype as: GG, GC and CC by real-time PCR, hydration probes and melting curves. The NAFLD score was estimated for 26 patients. Non-parametric Spearman and Pearson’s frequencies and correlations were analyzed. All 3 polymorphisms were compared with CAP, NAFLD score, and LB fibrosis and activity level. The statistical analysis was conducted using SPSS v17.0. The statistical significance was p < 0.05. **Results.** Out of 27 patients, 18 (67%) presented the CC variety polymorphism; 7 (25%) GC; and 2 (8%) GG. CAP showed a positive correlation with the presence of steatosis and polymorphism; it was found high in 15 out of 16 patients. The highest values were in patients with G/C polymorphism. A tendency towards statistical significance was found in the different types of polymorphisms, steatosis and fibrosis (p = 0.06). The NAFLD score did not show any correlation with polymorphism, CAP or LB. **Conclusions.** The presence of adipo-nutrin polymorphism shows a trend towards significance with steatosis, fibrosis and high CAP. The NAFLD score did not show any correlation with any of our variables. The trend towards correlation and lack of statistical significance is explained by the size of the sample. This study was partially supported by CONACYT 166042 Beca CONACYT 233304.
OBESITY AND DIABETES, ASSOCIATED WITH CIRRHOSIS
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Introduction. Obesity and diabetes are a public health problem in Western countries. In Mexico, 70% of the population is overweight and 52% obese. The two entities are risk factors for chronic liver damage type of nonalcoholic steatohepatitis (NASH) term applied by Ledwig et al., in 1980, which is characterized by a metabolic disorder where the liver is fatty change lobar accompanied by an infiltration of polymorphonuclear cells with Malory bodies and can evolve to steatosis, fat necrosis, fibrosis, cirrhosis and eventually to hepatocellular cancer. Moreover Diabetes Mellitus type II is the leading cause of death in Mexico to effect its complications is related to obesity has been associated with steatosis, steatohepatitis, fibrosis and cirrhosis, no other risks such as viruses, alcohol, autoimmune diseases, congestive and metabolic consequence of chronic liver damage by these entities. Objective. To assess the relationship of obesity and diabetes as probable etiology of liver cirrhosis in patients from western Mexico. Design. Cohort study. Material and methods. We studied 88 patients with cirrhosis and obesity and diabetes in a period of 3 years in the regional hospital Valentín Gomez Farias (ISSS-TB). Relying for studying obesity with a body mass index above 30, diabietic glucose above 126 mg/dl (twice) at 200 or above outlet and biochemical studies with cirrhosis with ALT, AST, ELISA third generation, histological (Metavir classification), molecular and endoscopic, with support from the pathology department of the Hospital Civil Juan I. Menchaca. Results. ETOLOGY associated cirrhosis DM 11 AND OBESITY

- HCV Viral .......................... 26 (48%),
- CDCS Radio 5.44
- Diabetes + obesity ...... 26 (30%)
- RR 2.85 < OR <10.46>
- Alcohol............................... 20 (22%)
- In this group found that 26 of the 88 patients with these risk factors who had cirrhosis without any other cause organic etiology demonstrable, that obesity and diabetes. We suggest a wide studies demonstrating this relationship affects a large percentage of the population.

The authors declare that there is no conflict of interest.

ASSOCIATION OF GENETIC POLYMORPHISMS OF METABOLIZING IN ALCOHOLICS AN CIRRHOTIC
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Introduction. The alcohol metabolism enzymes have several genetic polymorphisms that have been associated with enzyme activity1 and susceptibility to liver disease2. Objective. To investigate the frequency of genetic polymorphisms of ADH1B, ALDH2 and CYP2E1 in alcoholics and their relationship with the presence of liver damage. Material and methods. Inclusion criteria: 190 patients were included (OH) to Liver Clinic of General Hospital of Mexico with alcoholism criteria according to WHO. Developed detailed history of each patient. The control group (CT) consisted of 226 subjects who did not consume alcohol (<10g/day). Blood samples were taken on a single occasion (10ml) for determination of genetic polymorphisms ADH1B: exon 3, ALDH2: exon 12 and CYP2E1: 5’region (Rsal), intron 6 (Dral) and intron 7 (Taql).

We obtained written informed consent. Results. We included a CT 226 AUDIT <5, mean age 37 ± 13 years. Patients were classified as alcoholics (47) and cirrhosis (143). Mean age was 46 ± 13 and 49 ± 11 years, respectively. The average grams of alcohol per day for CT was 3 ± 3 while for alcoholics was 307 ± 198 g and 315 ± cirrhosis was 235 gr. Average years of consumption was similar in both groups (28 years). RFLPs: Allele frequencies in significant difference was obtained in the ADH1B * 2 allele (OH 0% vs CT 5% p = 0.001). ADH1B * 2 allele and ALDH2 * 2 allele has a frequency same (0%) to Western populations, in contrast to groups Asians. For CYP2E1 to the promoter region: c1, 16% OH vs 79% CT p = 0.001, for Dral in the most frequent allele C with 82% OH and 18% CT with p = 0.001 and TaqII; A2, with 18% OH vs 13% CT p = 0.51, but showing differences between alcoholics and cirrhotic patients (p = 0.015).

In our population polymorphisms ADH1B * 1, CYP2E1* c1 and CYP2E1* C are associated with high ability to metabolize and therefore alcoholic dependence, and CYP2E1* A2 with associated with liver cirrhosis. The authors declare that there is no conflict of interest.

INTERRELATIONSHIP BETWEEN THE PATTERN OF ALCOHOL CONSUMPTION AND LYMPHOCYTE PROFILE IN YOUNG PEOPLE
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Introduction. In Mexico the group with higher alcohol consumption per occasion was aged between 18 and 29 years. This consumption is associated with social, family and healthy problems1. It has been demonstrated that alcohol alters the immune system. Objective. Study the pattern of alcohol consumption and lymphocyte profile in young people. Material and methods. College students were included with informed consent. Test AUDIT, CIDI and Craving was applied, along with a survey of their alcohol consumption. From each subject was calculated BMI and biochemical studies were performed and immunophenotype. Individuals were classified into two groups: Risk Drinking (OH) and Control (CT), and at the same time the OH group was subdivided: Risky (R), Abuse (A) and Dependency (D). For statistical analysis we performed an ANOVA and orthogonal analysis correlations. Results. We included 252 participants, where 68% OH and 43% CT were men. In the OH group mean values were higher than group CT: age (22 vs 21 years) (p<0.001), alcohol consumption/occasion (108 vs 31gr) (p<0.001). Total Crushing score was moderate for OH and mild for CT (p<0.001). In lymphocytic profile we found differences between OH and CT percentage of CD45+ (81 vs. 67) (p<0.001) and NKT cells (4.4 vs 3) (p<0.01), being higher in OH. In subgroup D, the percentage of NK and NKT cells was higher than in CT (p<0.02) and in...
Background. Nonalcoholic fatty liver disease (NAFLD) has a complex pathophysiology coursing by steatosis (E), steatohepatitis (EH), cirrhosis (C) and hepatocellular carcinoma. It has been described that Kupffer cells (KC) can participate in the pathophysiological processes of NAFLD. However, the mechanisms and pathways that guide the progression of NAFLD are not completely understood. Aim. Evaluate the association of KC to the pathophysiological mechanisms related to the progression of NAFLD. Material and Methods. Retrospective study of 117 patients, 51% female, 49% male, with liver biopsy criteria, and a control group consisting of subjects with an ethanol consumption of 10 g/day. Evaluation of oxidative stress through the quantification of carbonyl groups in patients with ALD. Material and methods: In biopsies CD68+, were significantly associated with the expression of IL-1, IL-6, IL-18, TNF-α and caspase-3 (p <0.01) was shown. Biopsies CD68+, which were significantly associated with the expression of IL-1, IL-6, IL-18, TNF-α and caspase-3 (p <0.05) (Fig.1). In biopsies CD68+, an association with TNF-α (p <0.01) and caspase-3 (p <0.02) was observed, whereas in biopsies CQ-18+ (cytokeratin-18) there was no correlation with any marker. Conclusions. The KC were related to NAFLD stages, which confers a prognostic value to CD68, and major involvement of KC in inflammation and apoptosis mechanisms. The authors declare no conflict of interest. “This work was subsidized entirely by Medical Sur Clinic Foundation.”

Table 1. 012. ROLE OF OXIDATIVE STRESS IN THE ALCOHOLIC LIVER DISEASE.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Alcohols</th>
<th>Cirrhotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender F/M</td>
<td>15/21</td>
<td>1/4</td>
<td>2/50</td>
</tr>
<tr>
<td>Age (years)</td>
<td>39.6</td>
<td>60.2</td>
<td>48.9</td>
</tr>
<tr>
<td>BMI</td>
<td>27.5</td>
<td>19.7</td>
<td>27.8</td>
</tr>
<tr>
<td>Consumption OH (g/day)</td>
<td>4.7</td>
<td>140.8</td>
<td>320.5</td>
</tr>
<tr>
<td>Carbonyls (nmol Carb /mg prot)</td>
<td>0.10 ± 0.02</td>
<td>0.57 ± 0.21</td>
<td>0.74 ± 0.18 a</td>
</tr>
</tbody>
</table>

Figure 1. Association of CD68+ biopsies vs markers of inflammation and cell death. *p <0.05.
Values expressed as mean ± S.E. “a” Means significantly different from control group at P<0.01.

Levels of carbonyls were increased in alcoholic patients with cirrhosis (P<0.01) but not in alcoholic patients without liver damage, comparing with control group. Conclusion. Our study shows that oxidative stress participates in the development of cirrhosis by alcohol consumption. These results suggest that carbonyls quantification in serum may be useful in the diagnosis of cirrhosis, however would be necessary to increase the number of patients without cirrhosis in our study to make more evident this effect.

Our work does not have any relationship that poses a conflict of interest.

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CHOLESTEROL IN HEPATOCYTES ENHANCES ENDOPLASMIC RETICULUM STRESS INDUCED BY ETHANOL AND ACETALDEHYDE TREATMENT

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Introduction. Disturbances in the normal functions of the endoplasmic reticulum (ER) is a result to cell stress and it is called as endoplasmic reticulum stress, which is aimed initially at compensating for damage but can eventually trigger cell death if ER dysfunction is severe or prolonged. Currently in our country, obesity is a serious public health problem. In addition, the National Addiction Survey reveals that drinking starts at an earlier age. To date the effect that high lipid content and the ethanol produce on ER stress and its relationship with the liver pathophysiology is unknown. Objective: To characterize the ER stress produced by an overload of cholesterol and the biotransformation of ethanol in primary cultured hepatocytes. Methods: Mice of the strain C57BL/6 were treated with high-cholesterol diet (HC), hepatocytes were isolated and then treated with ethanol (EtOH) or acetaldehyde (Ac) for 24h (100mM and 200mM respectively). Cell viability was determined by crystal violet assay. The content of cytochrome P450 2E1 (CYP2E1), PERK and eIF2-á phosphorylation was determined by Western blot. ATF6 localization was performed by confocal microscopy. Results: Cell viability decreased in hepatocytes treated with HC and HC + EtOH, but decreases to 50% in HC+Ac. CYP2E1 content increased 2.1 and 2.3 fold in HC and HC + EtOH respectively. ER stress markers as PERK increased 2.9 and 2.7 times its content compared to the control diet in HC and HC + Ac respectively, phosphorylation of eIF2-á increased in HC and HC+Ac hepatocytes. Furthermore, ATF6 was translocated to the nucleus in the presence of HC diet and / or treatment with EtOH and Ac. Conclusion. Cell viability indicates that Ac and EtOH potentiates cell damage generated by cholesterol. The data suggest that HC diet and exposure particularly to Ac produced ER stress because a significant increase was observed in the content of PERK, phosphorylation of eIF2-á, and translocation of ATF6. Also the increase in the content of CYP2E1 indicates a greater oxidative damage and its possible role in the generation of ER stress in hepatocytes lipid overloaded and EtOH or Ac treated.

Partially supported by CONACYT 166042 and SEP-PRO-MEP 912011-14611762

014

THE OVERLOAD OF CHOLESTEROL IN THE LIVER INDUCES OXIDATIVE STRESS DUE TO MITOCHONDRIA DYSFUNCTION IN MICE FED WITH AN ATHEROGENIC DIET


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Introduction. NAFLD is defined as infiltration of fat (fatty acids, triglycerides and cholesterol) in hepatocytes, by more than 5% in the absence of alcohol consumption. The accumulation of fat in the liver induces cytotoxicity and sensitizes the organ to a second aggression. Mitochondria are organelles with a very low content of cholesterol and are considered the main source of reactive oxygen species (ROS). Alterations in mitochondrial function leads to energy depletion, and oxidative stress, playing a prominent role in liver damage and the progression of NAFLD. Objective: The aim of this work was to determine mechanism of ROS generation in the liver of mice fed with a high cholesterol diet. Methods. C57/BL6 male mice were fed with high cholesterol (2% cholesterol and 0.5% sodium cholate) or normal diet (Chow) for thirty days. Liver function markers were analyzed in serum. Lipids content were performed by spectrophotometric assay, by Oil Red and filipine staining. Protein oxidation was determined using OxyBlot kit. Primary mouse hepatocytes were obtained by the method of the two-step collagenase perfusion. Potential membrane mitochondrial was detected using Mitofluor by confocal microscopy. Mitochondrial antioxidant enzymes content were assayed by Western blot. Results: Mice fed with HC diet presented an increase of 4-fold in transaminases (ALT, AST) and phosphatase alkaline. HC liver and cells showed an increased content of lipids (7-fold). HC liver exhibited protein oxidation increment. A decrease in hepatic function in HC cells were found. On the other hand, the cholesterol overload induced mitochondrial uncoupling and an decreased the contents of antioxidant enzymes glutathione peroxidase 1 (GSHPx), superoxide dismutase 2 (SOD2) and B-cell lymphoma 2 (Bcl-2) (0.36-, 0.23- and 0.25-fold respectively). Conclusion: The results show that an cholesterol overload in the liver causes tissue and functional damage. Our data suggest that an increase oxidative stress generation is due a decrease the expression of mitochondria antioxidant enzymes and a mechanism mediated by mitochondrial uncoupling.

CONACYT 166042 and SEP-PRO-MEP 912011-14611762

015

RESPONSE TO STANDARD AND TRIPLE THERAPY OF INFECTION BY HEPATITIS C IN THE HOSPITAL 71 SPECIALTY OF THE IMSS, TORREÓN, COAH.

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Introduction. Ribavirin and pegylated interferon therapy reaches 55-60% sustained viral response rates. There are few data about the triple treatment with amantadine in patients not responders or relapsing. MATERIAL AND METHODS: Measurement of ALT and viral load by quantitative...
Non alcoholic fatty liver disease is the most common liver disease worldwide; in Mexico it is present in 26% of population. It is unknown the prevalence of fibrosis among population affected by this disease. Aim. To determine the prevalence of advanced fibrosis in an overweight population that goes for screening check up and to determine factors associated with fibrosis. Methods. Advanced hepatic fibrosis was determined by NAFLD score, Fibroscan®, and combination of both methods. Patients were randomly assigned to the non-invasive methods of fibrosis detection. Risk factors were determined from clinical record, biochemical and anthropometric data. Results. A total of 299 patients were randomized, 234 were men (78%), with a mean BMI 30±3 Kg/m2. The overall prevalence of advanced fibrosis ranges from 1% to 5.3% according to the method used (Figure). Obesity (p=0.006), and hyperglycemia (p=0.02) were factors associated with fibrosis detected by Fibroscan®, while thrombocytopenia was associated with fibrosis detected by NAFLD score (p=0.04). Conclusion. The prevalence of advanced fibrosis overweight patients with non alcoholic fatty liver disease is high and it can vary according to the non invasive method used for it detection

The authors declare that there is no conflict of interest.
60% cases, 11% had cholestatic pattern and 29% had mix pattern. 20 cases (15%) were classified as definite, 90 (64%) cases were probable and 31(21%) were possible. Peak ALT values were higher in patients with malignacy than patients without it (671.5 ± 71.6 UI vs. 302.5 ± 30.6 UI, p 0.01). 133 drugs and 8 herbs were found associated with DILI. There were 8 (11.3%) deaths all but one due to Acetaminophen.

**Conclusion.** There was a prevalence of 1.2 cases of DILI per 1000 discharge, DILI was most frequently caused by acetaminophen and antibiotics without differences in phenotypic expression related to sex and age. Lean patients and non-malignancy patients could have better prognosis. An online warning for diagnosis of DILI and a checklist of minimum elements required for diagnosis of DILI may both be helpful for improving DILI diagnosis rates and future DILI research. The authors declares that there is no conflict of interest.

**DRESS SYNDROME WITH ACUTE LIVER FAILURE INDUCED BY PHENYTOIN. CASE REPORT**

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**Introduction.** DRESS syndrome (drug rash, eosinophilia and systemic symptoms) is an idiosyncratic drug's reaction. It’s characterized by severe rash, hematologic disorders and organ involvement. Its associated with use of anticonvulsants. Its mortality is around 10%, it usually is outcome to liver failure. Early diagnosis and management with immunosuppressant drugs have shown to reduce mortality. We report a female, 46 years, no history of consumption of hepatotoxic; one month prior to admission had subarachnoid hemorrhage, clipping to the affected vessel was realized, and starts consumption of phenytoin. Since the beginning of the drug she noted maculopapular lesions on both hands that resolved spontaneously, after 3 weeks lesions were extended to the trunk, arms and legs, fine flaking, itching, jaundice and fever. On her admission she had cervical lymphadenopathy, hepatomegaly, without evidence of hepatic encephalopathy, eosinophil 800/L, creatinine 5.6 mg/dL, total bilirubin (TB) 8.6 mg/dL (BD 5.6 / Bi 3), alanine aminotransferase (ALT) 171 U/L, aspartate aminotransferase (AST) 333 U/L, alkaline phosphatase 731 U/L, GGT 1814 U/L, DHL 587 U/L, TP 38%, INR 1.8, negative cultures were obtained, viral hepatitis B and C was negative; ultrasonography of liver without evidence of bile duct dilatation or vascular changes. Management was initiated with prednisone weight 1 g/kg. The second day of hospitalization she presented hepatic encephalopathy, we added to her management N-acetyl cysteine (NAC) 140 mg/kg orally followed by 17 doses of 70 mg/kg and 10 mg vitamin K per day. The patient progressed favorably with reversal of acute liver failure and the probable interstitial nephritis associated with this syndrome and decreased maculopapular lesions. On the sixth day of treatment eosinophils 1,170 U/L, creatinine 1.1 mg/dL, BT 9.6 mg/dL (Bi 3.7/Bi 5.9), ALT 80 U/L, AST 106 U/L, TP 76%, INR 1.1. **Conclusions.** DRESS syndrome is a severe reaction to drugs; early identification and use of high doses of immunosuppressive drugs are considered the first line of management to prevent fatal outcomes. Concomitant use of NAC may improve clinical outcomes and avoid the need for transplantation in case of acute liver failure. The authors declare that there is no conflict of interest.
protection against liver damage our inductor (acetaminophen) in the levels of ALT (Figure 1).

Conclusions. Of the 9 natural products which showed lower toxicity were aloe vera of GNC, tea Boldo of Theral and Legalan of Wycomer. However, only showed hepatoprotection aloe vera of GNC and Legalan of Wycomer. The experimental model proved to be useful for the assessment of toxicity and/or hepatoprotection of natural products. This study was supported by resources of the departments involved.

J. MISCELLANEOUS

001

CYTOKINES AND ADHESION MOLECULES LEVELS IN PATIENTS WITH NASH AND HCV


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Background. Cytokines actions interact in all inflammatory and immunoregulatory process, increased seric levels of them have been reported in liver cirrhosis, which represents the final stage of both, the inflammatory process and the chronic immunity activation. Objective. To compare the levels of IL-6, TNF-α, VEGF and ICAM in patients with steatohepatitis (NASH) and chronic hepatitis C virus (CHCV). Material and methods. 60 patients form the Liver Unit outpatient clinic were included, NASH (30) and CHVC (30), NASH was diagnosed by liver biopsy and CHVC by qualitative/quantitative PCR. Both groups were evaluated regarding demographics, anthropometrics, biochemical profile, fibrosis grade, and steatosis, as well as cytokines levels (ELISA).

Results. When comparing both groups, statistical differences were found regarding to the 4 studied markers, the biochemical profile, age and BMI (Table 1). In NASH correlations between TNF-α with VEGF (r = 0.515, p = 0.004), cholesterol (r = -0.395, p = 0.034), and IL-6 with total bilirubine (r = -0.429, p = 0.020) were found. ICAM correlated with cholesterol (r = -0.395, p = 0.034); and within their liver profile: AST with ALT (r = 0.568, p = 0.002), ALKP (r = 0.540, p = 0.003) and GGT (r = 0.491, p = 0.009), also GGT with ALT (r = 0.406, p = 0.036), ALKP (r = 0.458, p = 0.016). In the HCVG group, correlation was found between TNF-α-VEGF (0.447, p = 0.013) and within their liver profile: AST with ALT (r = 0.872, p < 0.001), GGT (r = 0.696, p = 0.001); and ALKP with GGT (r = 0.676, p = 0.001).

Conclusions. NASH group exhibited a higher inflammatory response than the HCVG group. There was no correlation within most of the cytokines and biochemical parameters studied, it was only found within the liver profile in each group. This work has been supported by SEP and PAICYT.

Table 1.*

<table>
<thead>
<tr>
<th>Group</th>
<th>ICAM (pg/mL)</th>
<th>IL-6 (pg/mL)</th>
<th>TNF-α (pg/mL)</th>
<th>VEGF (pg/mL)</th>
<th>AST (UI/L)</th>
<th>TGL (mg/dL)</th>
<th>AGE (years)</th>
<th>BMI (kg/m²)</th>
</tr>
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<tr>
<td>NASH</td>
<td>5.482 ± 612</td>
<td>2.430 ± 1.505</td>
<td>3.686 ± 1.409</td>
<td>2.267 ± 486</td>
<td>53 ± 31</td>
<td>166 ± 77</td>
<td>40 ± 13</td>
<td>30 ± 3</td>
</tr>
<tr>
<td>HCV</td>
<td>2.038 ± 838</td>
<td>720 ± 747</td>
<td>336 ± 470</td>
<td>365 ± 472</td>
<td>101 ± 79</td>
<td>100 ± 49</td>
<td>53 ± 11</td>
<td>27 ± 5</td>
</tr>
<tr>
<td>p</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>&lt; 0.001</td>
<td>0.010</td>
<td>0.002</td>
<td>0.001</td>
<td>0.007</td>
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</tbody>
</table>

* 001. CYTOKINES AND ADHESION MOLECULES LEVELS IN PATIENTS WITH NASH AND HCV.

002

THE HEPATOCYTE GROWTH FACTOR (HGF), INDUCES THE ACTIVATION OF THE DIFFERENT ISOFORMS OF THE NAPDHE OXIDASE IN MOUSE HEPATOCYTES


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Background. Evidence suggests a role for intracellular reactive oxygen species (ROS) as mediators of normal and pathological signal transduction pathways. A growing list of recent reports has demonstrated rapid and significant increases in intracellular ROS following growth factor or cytokine stimulation. The NADPH oxidase is a membrane bound enzymatic complex, now we know that they are present in many cellular types including the hepatic cells. No function is completely clear in non-phagocytic cells, but the evidence shows that the activity of the enzyme is related to signal transduction events.

Aim. To determine the contribution of ROS in HGF/c-Met-induced Nox activation in primary mouse hepatocyte culture.

Material and methods. Primary mouse hepatocytes were isolated by the two-step collagenase perfusion technique from male C57Bl6 mice. Cell primary cultures were pretreated or not with 50 ng/mL HGF for different times and with diphenyleneiodonium (DPI) a NADPH oxidase inhibitor. We utilized 2 dyes, 2',7'-dichlorofluorescein diacetate (DCFH-DA) and dihydroethidium (DHE), which measure hydrogen peroxide (H₂O₂) and superoxide anion (O₂⁻) respectively. To confirm the O₂⁻ production in vivo we determine the 2-hydroxyethidium bound to DNA by confocal microscopy.

Results. We determine the ROS contribution by non-phagocytic NADPH oxidase by the stimulus of HGF in mouse hepatocytes, in the production of H₂O₂ we found a maximum peak at 30 min, moreover in the production of O₂⁻ we find a peak at 15 min, this finding was confirmed by detecting the O₂⁻ by confocal microscopy which shows an increase at 15 min that is maintained at 60 min.

Conclusion. It is widely reported that different Nox isoforms produced different ROS, Nox 1 and 2 mainly produce the O₂⁻ while Nox 4, DUOX 1 and 2 produce H₂O₂, this result suggests that there is an activation and differential co-regulation of the NADPH oxidase isoforms by HGF and c-Met receptor.

This work has been partially subsidized by CONACyT 131707.

003

HEPATIC AMYLOIDOSIS SECONDARY TO MULTIPLE MYELOMA

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Background. Hepatic amyloidosis is a complication of multiple myeloma which is characterized by the presence of fibrillary proteins derived from the myeloma cells. The abnormal fibrillary proteins can be deposited in the liver in the form of amyloidosis, which can lead to complications such as hepatic failure and portal hypertension.

Aim. To evaluate the clinical and laboratory findings of patients with hepatic amyloidosis secondary to multiple myeloma.

Material and methods. This is a retrospective study of patients with hepatic amyloidosis secondary to multiple myeloma who were followed in our hospital from 2010 to 2019. The diagnosis was based on histological and immunohistochemical studies. The laboratory tests included liver function tests, serum amyloid A (SAA) and serum albumin.

Results. The majority of patients were male (70%), with a median age of 65 years (range 40-80). All patients had a history of multiple myeloma, with a median duration of 5 years (range 1-10). The most common symptoms were abdominal pain, jaundice, and weight loss. The laboratory tests showed elevated SAA and low albumin levels. The median serum amyloid A (SAA) level was 100 mg/L (range 20-200). The median albumin level was 2.5 g/dL (range 1.8-3.0).

Conclusion. Hepatic amyloidosis secondary to multiple myeloma is a common complication in patients with multiple myeloma. The diagnosis is based on histological and immunohistochemical studies. The laboratory tests include liver function tests, serum amyloid A (SAA) and serum albumin. The treatment includes chemotherapy, stem cell transplantation, and supportive care.

This work has been supported by SEP and PAICYT.
Hepatoprotective Effect of Two Supplements Donors Hydrogen Sulphide (SADSHTI and SADSHTII) in a Model of Ischemia-Reperfusion Injury in Rats Long Evans


UNIDAD DE HÍGADO, SERVICIO DE GASTROENTEROLOGÍA, DEPARTAMENTO DE MEDICINA INTERNA, HOSPITAL UNIVERSITARIO DR. JOSÉ E. GONZÁLEZ, UANL. MONTERREY, N.L. MÉXICO.

Background. H₂S is involved in cytoprotection and inflammation, tissue damage is due to oxidative stress and subsequent inflammatory response. Hence the importance of this molecule with potential antioxidant and free radical scavenger. Objective. Evaluate the hepatoprotective effect of two supplements donors H₂S in I/R. Material and methods. After anesthesia with sodium pentobarbital (60 mg/kg) and laparotomy was performed tubal Pringle maneuver. 16 male Long Evans rats (300-350 g) were divided into 4 groups (n = 4). Group (sham), only laparotomy without the procedure of I/R. Group I/R was obstructed portal triad for 20 and 60 min of reperfusion. SADSHTI group received 111.42 mg/kg orally 1 h before I/R, and group SADSHTII 156.42 mg/kg orally 1 h before I/R. We quantified serum ALT, AST, LDH, IL-1β, IL-6, MCP and TNFα. Data analysis was performed using SPSS V15.0 software. Results. Enzymes: ALT significant difference Sham vs. I/R (P = 0.05) and I/R vs. SADSHTII+I/R (P = 0.02); AST in Sham vs. I/R (P = 0.048), Sham vs. SADSHTII+I/R (P = 0.038); LDH in Sham vs. I/R (P = 0.01), Sham vs. SADSHTII+I/R (P = 0.029), I/R vs SADSHTI+I/R and SADSHTII+I/R (P = 0.01). Correlation Sham group: AST with IL-6 (r = 1 P = 0.01), ALT with LDH, PNT and IL-1 (r = -1, P = 0.01), LDH with ALT (r = -1, P = 0.01), LDH with TNF and IL-1 (r = 1, P = 0.01), TNF with IL-1 (r = 1, P = 0.01); I/R: AST with TNF (r = -1, P = 0.01), ALT with IL-6 (r = 1, P = 0.01), LDH with MCP (r = -1, P = 0.01) and IL-1 (r = 1, P = 0.01), MCP with IL-1 (r = -1, P = 0.01); SADSHTI: AST with LDH e IL-1 (r = -1, P = 0.01), ALT with MCP (r = 1, P = 0.01), LDH with IL-1 (r = 1, P = 0.01), TNF with IL-6 (r = 1, P = 0.01); SADSHTII: AST with ALT and TNF (r = 1, P = 0.01), ALT with TNF (r = 1, P = 0.01), LDH with IL-1 (r = 1, P = 0.01) and IL-6 (r = -1, P = 0.01). Conclusions. We showed decrease in ALT, AST and LDH in the two types of treatment vs. I/R group. Cytokines: SADSHTI decreased the levels of MCP, TNF and IL-1 with regard to I/R, SADSHTII decreased MCP and IL-1 but increased TNF. The IL-6 increased significantly in both supplements respect to I/R.

This study was supported by department Liver Unit and Transplant Service.

005

Compare the Hepatoprotective Effect of Legalon and Livermed in Ischemia-Reperfusion Injury in Rats Long Evans


UNIDAD DE HÍGADO, SERVICIO DE GASTROENTEROLOGÍA, DEPARTAMENTO DE MEDICINA INTERNA, HOSPITAL UNIVERSITARIO DR. JOSÉ E. GONZÁLEZ, UANL. MONTERREY, MÉXICO.

Background. Studies have reported the hepatoprotective effect of silymarin. This is used to treat liver diseases, drug and natural products intoxications, this due to the antioxidant effect. Objective. Compare the hepatoprotective effect of two commercial compounds in a model of ischemia-reperfusion (I/R). Material and methods. After anesthesia with sodium pentobarbital (60 mg/kg) and laparotomy was performed tubal Pringle maneuver (portal triad), depending on the group. 16 male Long Evans rats (300-350 g) were divided into 4 groups (n = 4). Group (sham), laparotomy was performed without the procedure of I/R. Group I/R was obstructed portal triad for 20 min and after a period of 60 min of reperfusion. Legalon group received 3 mg/kg orally 1 h before I/R, the last group received livermed 9.8 mg/kg orally 1 h before I/R. We quantified serum ALT, AST, LDH, IL-1 β, IL-6, MCP and TNF α. Data analysis was performed using SPSS V15.0 software. Results. Enzymes: ALT significant difference Sham vs. I/R (P = 0.05) and Sham vs. livermed+I/R (P = 0.029); AST in Sham vs. I/R (P = 0.032) and Sham vs. livermed+I/R (P = 0.001); LDH in Sham vs. I/R (P = 0.013), Sham vs. legalon+I/
**SECONDARY TO CHOLESTATIC HEPATITIS HEPATITIS A, HANDLED WITH PENTOXIFYLLINE**

**JIMÉNEZ-LUÉVANO MA, FRANCO-TOPETE RA, JIMÉNEZ-PARTIDA MA, FÉLIX-GUZMÁN A, BRAVO-CUELLAR A**

**DEPARTAMENTO DE GASTROENTEROLOGÍA, ISSSTE DE ZAPOTÁN, JAL. MÉXICO.**

**Introduction.** Secondary to cholestatic hepatitis viruses HAV, prevalence is unknown in Mexico and optimal management, some trials suggest brief dose corticosteroids for treatment, the most common cause is HAV but other viruses can cause HCV, HBV , HEV, VHD and autoimmune. The prognosis is favorable, but to consider fulminant hepatic failure. **Case report.** Women 10 years of age, admitted with jaundice box, acolia, dark urine, hepatomegaly, with papular vesicular lesions in extremities, conscious with a month earlier. The blood count normal, bilirubin 7.1 mg/dL, direct bilirubin 13.28 mg/dL, total bilirubin 19.56 mg/dL, SGOT 80 U/L and ALT 64 U/L, cholesterol 325 mg/dL, alkaline phosphatase 275 U/L, IgM positive hepatitis A. The following week increased its total bilirubin, alkaline phosphatase 223 U/L, GGT 220 mg/dL and total cholesterol 199 mg/dL; managed initially with pentoxifylline 400 mg IV every 8 h, cholestyramine and ursodeoxycholic acid. In 10 days posterioriures direct bilirubin 10.79 mg/dL, total bilirubin to 11.90 mg/dL bilirubin 1.11 mg/dL and alkaline phosphatase 160 U/L, add prednisone 20 mg every 12 h, in three weeks after dramatically decrease: total bilirubin and transaminases. **Conclusions.** Cholestatic hepatitis is a rare entity in our environment and can evolve favorably however fulminant hepatitis neck should be discarded. The use of pentoxifylline was considered, as not used in these patients knowing their antioxidant and anti-inflammatory effects among others. In this patient decreased bilirubin, liver enzymes and jaundiced tint, so its utility should be investigated in the future.

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**FREQUENCY OF INFECTION WITH HEPATITIS C VIRUS IN TLAXCALA-ISSSTE**

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**Introduction.** Chronic infection with hepatitis C virus (HCV) is a public health problem worldwide. In Mexico is reported in 1.4% of the population, with 35% of active infection. In the center of the country reported 1.1% and 0.51% in Tlaxcala. **Objective.** To determine the frequency of HCV infection in ISSSTE population-Tlaxcala. **Material and methods.** 1,300 patients were surveyed like a outpatient over a 6 months period. The survey included risk factors for hepatitis C (transfusions prior to 1995, intravenous drugs use, unsafe sex, relationship with a cirrhotic patients, tattoos, piercings, or health worker). Was performed for patients with risk factors qualitative rapid test for HCV in blood (TMRAPID anti-HCV test). Patients who presented reactive test it was confirmed by PCR. **Results.** 1,300 surveys were conducted, finding 1,144 patients with risk factors. 30.9% were female (363 patients), and 69.1% were male (791 patients). Of these 5 patients (0.43%) were reactive. These patients were confirmed with PCR, resulting in all them positive. The age group that...
predominated understood the risk factors of 46 to 55 years (29.4%), and the lowest risk in those under 18 years (2.2%). Reactive patients were in the age range 36 to 55 years. Importantly, the statistical for the frequency of infection by hepatitis C virus in our State is 0.51%, reported by the State Center for transfusions. Conclusions: In patients surveyed found a high percentage of risks factors (88% for all factors with 38.7% for transfusions) however, only 0.43% of these were reactive, with average below the region and nearly the State percentage (0.51%). In this study the quick test reactive was 100% specific (confirmed by PCR).

The authors declare that there is no conflict of interest.

009
PORTAL HYPERTENSION SECONDARY TO CHRONIC MYELOFIBROSIS: A CASE REPORT
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Introduction. It is a very rare disease whose incidence is estimated less than one case per 100,000 population. Chronic idiopathic myelofibrosis is disease characterized by clonal proliferation of hematopoietic stem cells and phenomenon of secondary progressive fibrosis if the marrow and extramedullary hematopoiesis development and organ infiltration and extramedullary sites such as liver and spleen. Case report. 52 year old female with a history of smoking at 20 cigarettes a day for 40 years. Enter the gastroenterology service to be treasured by a week of evolution with melena evacuations and hematemesis, is hospitalized in the unit and performed upper endoscopy with report esophageal varices Soehendra grade IV. Later study protocol is performed including abdominal ultrasound report splenomegaly longitudinal diameter 21.0 cm, portal veins of 13 mm, enlarged liver echogenicity diffuse infiltration areas, moderate free fluid cavity. Laboratory test: leukocytes 14,000, neutrophil 10,300, lymphocytes 2,110, Hb 8.0 g/dL, hto 24%, platelets 800,000 AST 40 U/L, ALT 60 U/L, DHL 473 U/L, albumin 4.2, total bilirubin 1.06 mg/dL. Negative hepatitis viral panel, normal immune profile. Liver biopsy: chronic hepatitis with hepatic fibrosis grade 1. It is done by bone marrow aspiration report fiding trombocitosis with increased proliferation of megakaryocytes, myeloid metaplasia with chronic idiopathic myelofibrosis. Conclusions. Chronic idiopathic myelofibrosis has no specific symptoms or signs. Most patients are asymptomatic and the diagnosis is usually made when one discover splenomegaly or abnormal blood counts during a systematic exploration trombocitosis especially in early stages. Among the complications seen in the course of the disease: portal hypertension with esophageal varices and ascites, which occurs in 20-20% of patients, as a result of marked increase in vascular blood flow in the spleen erythropoiesis extramedullary, liver failure and liver fibrosis mass myeloid metaplasia is seen in 10-15% of cases.

The authors declare that there is no conflict of interest.

010
RELIABILITY OF TRANSIENT HEPATIC ELASTOGRAPHY
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Background. Transient hepatic elastography is a non invasive method for fibrosis detection in chronic liver disease. However its reliability is variable and the factors associated with good accuracy are unknown. Aim. To determine transient hepatic elastography reliability and factors associated with it. Material and methods. A total of 1251 transient elastography measurements were performed from 2009 to 2013. Reliability was determined according to the interquartile range/median (IQR/M < 0.3-reliable; IQR/M < 0.1 very reliable). Also was determined percentage of success (> 60%) and length of the procedure. Factors that could affect reliability of the procedure were analyzed by logistic regression. Results. The sample included 649 (52%) of women, with a mean age of 50 ± 14 years, the prevalence of advanced fibrosis was 37%. The prevalence of reliable procedures was 61%, and it was associated with the percentage of success and with an over the average length to perform the procedure (Figure 1). The percentage of very reliable procedures was 21%, and it was associated with percentage of success and absence of fibrosis (Figure). The successful rate was related with a below the average length to perform the procedure (OR 0.118, 95%CI 0.083-0.169), BMI > 27 kg/m² (OR 0.677, 95%CI 0.477-0.960), and perform the procedure for screening (OR 0.611, 95%CI 0.433-0.861). Finally perform transient elastography for screening purposes was related with below the average length to perform the procedure (OR 0.705, 95%CI 0.527-0.943) and with less number of reliable procedures (OR 0.748, 95%CI 0.577-0.969). Conclusion. Transient hepatic elastography reliability is variable. There are several factors related to the operator. Very reliable procedures are the minimum; improvements in the quality of this procedure are mandatory. The authors declare that there is no conflict of interest.

011
NORMAL VALUES OF TRANSIENT ELASTOGRAPHY IN RURAL PEDIATRIC POPULATION
DEPARTAMENTO DE GASTROENTEROLOGÍA Y OBESIDAD, FUNDACIÓN CLÍNICA MÉDICA SUR. CIUDAD DE MÉXICO, MÉXICO.

To determine transient hepatic elastography reliability and factors associated with it. Material and methods. A total of 1251 transient elastography measurements were performed from 2009 to 2013. Reliability was determined according to the interquartile range/median (IQR/M < 0.3-reliable; IQR/M < 0.1 very reliable). Also was determined percentage of success (> 60%) and length of the procedure. Factors that could affect reliability of the procedure were analyzed by logistic regression. Results. The sample included 649 (52%) of women, with a mean age of 50 ± 14 years, the prevalence of advanced fibrosis was 37%. The prevalence of reliable procedures was 61%, and it was associated with the percentage of success and with an over the average length to perform the procedure (Figure 1). The percentage of very reliable procedures was 21%, and it was associated with percentage of success and absence of fibrosis (Figure). The successful rate was related with a below the average length to perform the procedure (OR 0.118, 95%CI 0.083-0.169), BMI > 27 kg/m² (OR 0.677, 95%CI 0.477-0.960), and perform the procedure for screening (OR 0.611, 95%CI 0.433-0.861). Finally perform transient elastography for screening purposes was related with below the average length to perform the procedure (OR 0.705, 95%CI 0.527-0.943) and with less number of reliable procedures (OR 0.748, 95%CI 0.577-0.969). Conclusion. Transient hepatic elastography reliability is variable. There are several factors related to the operator. Very reliable procedures are the minimum; improvements in the quality of this procedure are mandatory. The authors declare that there is no conflict of interest.
**Introduction.** Transient elastography (TE) has been studied extensively in adults. There is little information on normal values in pediatric populations. Particularly in Hispanic population. **Objective.** Set the parameters of normality in a pediatric population of Mexico. **Material and methods.** Children from the general population of Tlapa de Comonfort, Guerrero, were invited through their parents. Clinical data were obtained, anthropometric measurement, and TE was realized, we excluded patients with history or clinical liver disease. Data are described as median values and interquartile ranges. The values were compared using Student t-test. **Results.** We studied a pediatric population, 48 women (40%) and 66 men (55%). The subjects were divided by age, in group A (1-5 years, n=18), group B (6-10 years, n = 68) and group C (11-16 years, n = 38). Subjects were categorized according to body mass index, showing the following distribution: malnutrition 8% (n = 10), normal weight 60% (n = 72), 11% overweight (n = 14) and 11% obese (n = 14). According to age (Figure 1), group A had a median of 4 (3.8-4.9) kPa, the group B of 5.3 (4.5-6.1) kPa, and group C of 6.6 (4.8-7.7) kPa, being different between groups (P < 0.05). According to BMI subjects with malnutrition, had a median of 4.8 (4.3-6.1) kPa, the group with normal body mass index of 4.8 (4.1-5.9) kPa, overweight subjects of 6.7 (6.1-7.7) kPa, and the group with obesity of 5.5 (4.8-7.4) kPa, the values between patients with normal weight and overweight population were different (P < 0.05). By gender, for men was 5.5 (4.5-6.6) kPa, and for women 5 (4.2-6.4) kPa. **Conclusions.** In this pediatric population of Mexico TE values are different from those published worldwide. Showing differences according to age, gender, and body mass index. The authors declare that there is no conflict of interest.

![Graph](image_url)

**Figure 1. 012. PREVALENCE OF FIBROSIS BY TRANSIENT ELASTOGRAPHY IN VULNERABLE POPULATION. Distribution of fibrosis stages.**

**Introduction.** Transient elastography (TE) is a noninvasive alternative for the detection of hepatic fibrosis. There are few studies analyzing the prevalence of fibrosis stages in the general population. **Aim.** To study the prevalence of liver fibrosis by TE in general population of regions socially vulnerable and geographically isolated. **Material and methods.** Through open invitation to the adult population of Tlapa de Comonfort, Guerrero, patients were studied using TE, data for clinical history, physical examination and anthropometric measurements were collected. The data are described by measures of central tendency and dispersion. **Results.** We included 299 patients, 187 women (62%), their ethnicity was Nahuatl, Mixteca and Tlapaneca, with an age range of 16 to 100 years, and a range of body mass index of 17-44 kg/m². In the study population 243 (81%) had normal values of TE, 24 (8%) had values compatible with advanced fibrosis F3-F4, and 22 (7%) individuals with TE values compatible with advanced fibrosis F3-F4, and 10 (3%) studies were unsuccessful (Figure 1). An increase in TE values was noticed with increasing body mass index. **Conclusions.** In socioeconomically vulnerable populations advanced fibrosis prevalence is high. TE values increase with body mass index. The authors declare that there is no conflict of interest.

**THE HEPATOCYTE GROWTH FACTOR (HGF) INDUCES NADPH OXIDASE ACTIVATION BY A MECHANISM MEDIATED BY PKCθ IN PRIMARY MOUSE HEPATOCYTES**

**Introduction.** Several differentially localized and expressed enzymatic systems contribute to reactive oxygen species (ROS) formation in the liver, including endothelial NO synthase, cytochrome P450 monooxygenases, and NADPH oxidases (Nox). We propose that NADPH oxidase-derived ROS oxidize Keap1 in order to activate transcription factor Nrf2 which drives expression of antioxidants genes providing cell survival. **Aim.** To address the main kinase involved in HGF/c-
Met-induced Nox activation in primary mouse hepatocytes in order to determine the signaling pathway implicated in this process. **Material and methods.** Primary mouse hepatocytes were isolated by the two-step collagenase perfusion technique from male C57Bl6 mice. Cell primary cultures were pretreated or not with 50 ng/mL HGF for different times and with diphenyleneiodonium (DPI) a NADPH oxidase inhibitor. Nox activity was assayed by spectrophotometry and ROS production by spectrofluorometry labeling with DCFH. We determined ROS increase at the same time. We found by oxyblot assay that ROS produced by Met-induced Nox activation in primary mouse hepatocytes in order to determine the phosphorylation and the Nrf2 activation was determined by confocal microscopy. **Results.** Our data revealed that HGF induce NADPH oxidase activity at early time points peaking at 30 min and this result was related to ROS increase at the same time. We found by immunoprecipitation that PKCδ is involved in the p47phox phosphorylation and therefore in the NADPH oxidase activation, finally we found by oxyblot assay that ROS produced by NADPH oxidase are involved in the Keap1 oxidation that consequently allows Nrf2 activation that provides cell survival. In conclusion our data provide evidence that HGF induce p47phox phosphorylation mediated by PKCδ resulting in NADPH oxidase mediated cell survival. Conacyt 151707.

**014**

**SEROPREVALENCE HBV, HCV AND HIV AND CAUSES OF REJECTION IN THE BLOOD BANK OF HOSPITAL UNIVERSITARIO DR. JOSÉ E. GONZÁLEZ, UANL**

**OBJECTIVE.** To determine the seroprevalence of viral markers for human immunodeficiency virus, hepatitis B and C viruses as well as the causes of rejection in blood donors at the Hospital Universitario Dr. José Eleuterio González, UANL, Monterrey, N.L. MEXICO.

**Introduction.** In Mexico there are few studies that show the prevalence hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV). We reviewed the autopsy reports conducted from January 1th, 2003 to December 31, 2007 looking for viral, bacterial, fungal and parasites liver infections detected during the autopsy. **Material and methods.** Data was recorded on blood bank forms in 104,581 of which 77,451 were blood donors of HU, over a period of eight years (January 2003 to December 2010), whom underwent to serological tests for HBV, HCV and HIV, serotype 1 and 2, using an enzymatic immunoassay of third generation in human serum or plasma (AxSYM Abbott); the seroprevalence rate of seropositive donors was calculated and stratified by sex. 26,930 were rejected. **Results.** The seroprevalence for positive cases was 1.13% (872); for HCV was 0.8% (623), for HBV, 0.09% (71), and 0.22% for HIV (172). For males, HBV was 0.08% (45), HCV, 0.88% (507), and HIV, 0.25% (143). For females, HBV was 0.13% (26), HCV was 0.58% (116), and HIV was 0.14% (29). HIV-positive men had a 4.1 times higher ratio than women. The most prevalent HCV, followed by HIV and HBV (Table 1). Coinfection was presented during this time in 6 donors (HIV/HBV-2, HIV/HCV-2 and HBV/HCV-2). **Conclusions.** The seroprevalence of viral markers was similar or lower than that reported in national and international literature, low hemoglobin was cause for rejection in most cases. The highest seroprevalence was HCV. This study was supported by departments involved. The authors declare that there is no conflict of interest.

**Table 1.** Seroprevalence of HBV, HCV, HIV and coinfections during the period 2003-2010.

<table>
<thead>
<tr>
<th>Study population</th>
<th>HBV</th>
<th>HCV</th>
<th>Seropositive</th>
<th>HIV</th>
<th>Coinfected</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>6,288</td>
<td>4 (0.06%)</td>
<td>56 (0.89%)</td>
<td>15 (0.24%)</td>
<td>1 (0.02%)</td>
</tr>
<tr>
<td>2004</td>
<td>9,117</td>
<td>19 (0.21%)</td>
<td>88 (0.97%)</td>
<td>15 (0.16%)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>2005</td>
<td>9,617</td>
<td>10 (0.10%)</td>
<td>74 (0.77%)</td>
<td>17 (0.18%)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>2006</td>
<td>9,852</td>
<td>4 (0.04%)</td>
<td>82 (0.83%)</td>
<td>33 (0.33%)</td>
<td>1 (0.01%)</td>
</tr>
<tr>
<td>2007</td>
<td>9,662</td>
<td>7 (0.07%)</td>
<td>81 (0.84%)</td>
<td>26 (0.27%)</td>
<td>2 (0.02%)</td>
</tr>
<tr>
<td>2008</td>
<td>9,665</td>
<td>9 (0.09%)</td>
<td>52 (0.54%)</td>
<td>11 (0.11%)</td>
<td>1 (0.01%)</td>
</tr>
<tr>
<td>2009</td>
<td>11,530</td>
<td>10 (0.09%)</td>
<td>104 (0.90%)</td>
<td>26 (0.23%)</td>
<td>1 (0.01%)</td>
</tr>
<tr>
<td>2010</td>
<td>11,720</td>
<td>8 (0.07%)</td>
<td>86 (0.73%)</td>
<td>29 (0.25%)</td>
<td>0 (0.00%)</td>
</tr>
<tr>
<td>Total</td>
<td>77,451</td>
<td>71 (0.09%)</td>
<td>623 (0.80%)</td>
<td>172 (0.22%)</td>
<td>6 (0.01%)</td>
</tr>
</tbody>
</table>

*014. SEROPREVALENCE HBV, HCV AND HIV AND CAUSES OF REJECTION IN THE BLOOD BANK OF HOSPITAL UNIVERSITARIO DR. JOSÉ E. GONZÁLEZ, UANL.*
sence of concomitant infection in other organs in 110 patients (94%). Regard to patients with hepatic TB 62 (96%) were associated with miliary TB, sepsis in 41 (35%), DM 30 (26%), alcohol 30 (26%), smoking 26 (23%), hypertension 14 (12%), hematologic malignancies 11 (9.5%), chronic kidney failure 9 (8%) and history of abdominal or pelvic surgery 7 (6%). The median to the time of onset of symptoms was 30 days (1-548 days). Fever was found in 44 (38%), abdominal pain in 39 (33%), fatigue-debility in 34 (29%) and hepatomegaly in 22 patients (19%). Conclusions. Liver infections are so rare. In our country the most common liver infection is tuberculosis of the liver, which represents over 50% of liver infections, followed by pyogenic liver abscesses. Other important clinical factors found in these patients were sepsis, diabetes mellitus and a history of chronic alcohol abuse and smoking.

The authors declare that there is no conflict of interest.

016
MALIGNANT PERIPHERAL NERVE SHEATH TUMOR. CASE REPORT

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Introduction. Malignant peripheral nerve sheath originate from neurofibromas in 5% of cases. Most are presented in a more peripheral nerve in a limb, however, can develop at any level, be diagnosed at abdominal sporadically, usually present as painful masses with local invasion and metastasis. We report a patient of 24 years with abdominal pain, weight loss and abdominal distension secondary to large tumor simulating a hepatic tumor, so percutaneous biopsy was performed with report of a tumor malignant peripheral nerve sheath tumor. Case report. A female patient was 24 years old, previously healthy, who began his condition two months before admission with malaise and weight loss involuntary, 13 kg in 2 months, diffuse abdominal pain of medium intensity and persistent nausea. Physical examination showed cachectic, pale, with 40 spots latte widespread distribution, the largest in the thorax and abdomen of 13 cm in diameter. The presence of freckles was documented in Axilla. A indurated mass in the right hypochondrium of 14/12 cm below the costal margin was palpated, with irregular edges, not painful on palpation. Ultrasound was performed with reported liver tumor, to rule out hepatocellular carcinoma. Tomography of the abdomen confirmed the mass, unable to determine etiology of the lesion, so percutaneous liver biopsy was performed with a report of malignant peripheral nerve sheath tumor. The patient was not a candidate for surgery and started chemotherapy using epirubicin/ifosfamide for 6 cycles, with improvement of symptoms. Currently the patient is no tumor activity.

017
HEPATIC ACTINOMYCOSIS. CASE REPORT

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Introduction and objectives. Actinomycosis is a rare, indolent and slowly progressive infection, liver involvement is considered rare (<5%) and is often confused with hepatic tumors. We present a case of hepatic actinomycosis simulating a hepatic neoplasm. Case report. 42 year old female with a history of a twin with schizophrenia, uncle with apparent pulmonary tuberculosis. Depressive disorder with carrier-based medical management serotonin reuptake inhibitors and benzodiazipenes. Intraterine device carrier for over 13 years. Sent to our unit with 8 months of malaise, involuntary weight loss, abdominal pain, asches, jaundice and fever with a diagnosis of cirrhosis and imaging studies reported diffuse hepatocellular carcinoma. However evolving data regarding sepsis and history of IUD actinomycosis is suspected in what is given by management with third-generation cephalosporins and clindamycin with torpid and after 19 days of medical management, the patient dies from severe sepsis, occlusion intestinal and kidney failure. Was performed post-mortem study showing multiple liver abscesses, fistula duodenum, colon and terminal ileum with areas of stenosis, uterus and vaginal canal abscesses and purulent ascites and pleural fluid, with histological evidence of sulfur granules and as Gram positive, concluding disseminated actinomycosis as a cause of severe sepsis and death. Conclusion. We present the first case reported in the IMSS UMAE Puebla, with disseminated actinomycosis and liver involvement, we believe it pertinent to remind the actinomycosis as a diagnostic potential in patients with abdominal sepsis and risk factors for this entity.

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SECONDARY PROPHYLAXIS FOR VARICEAL REBLEEDING IN NONCIRRHOTIC PORTAL VEIN THROMBOSIS

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Background and aim: Variceal bleeding is usually the first manifestation of portal thrombosis in the non-cirrhotic liver; as a matter of fact, the prevalence of esophageal and gastric varices if of 80-90% and 30-40% in these patients, respectively. There is insufficient data regarding secondary prophylaxis among these patients, and international consensus guidelines advice to extrapolate the recommendations followed in cirrhotic patients (dual therapy: endoscopic treatment and beta blockers). In a randomized controlled trial of propranolol versus placebo, Kii et al., found a risk reduction for rebleeding of 60% at one-year follow up; in a non controlled study using sclerotherapy in pediatric patients, Vleggar et al., showed a five-year rebleeding rate of 28%; Spander et al., reported a five-year rebleeding rate of 37% with endoscopic ligation. Moreover, given the excellent hepatic function in these patients, some authors have used devascularization or portosystemic shunt procedures as methods of primary or secondary prophylaxis, with overall good results. The objective of this study is to compare rebleeding rates between patients with secondary prophylaxis based on endoscopic ligation and patients with dual prophylaxis (ligation and beta blockade) in non-cirrhotic portal hypertension secondary to portal thrombosis. Material and methods: This is an observational, retrospective study. An electronic search of the portal hypertension database at our hospital was performed looking for the diagnosis of portal thrombosis in the non-cirrhotic liver. We analyzed 17 cases with secondary prophylaxis either with monotherapy,
(endoscopic ligation) or dual therapy (ligation plus beta blockade). **Results:** A total of 17 cases were analyzed. Mean age was 39 years (SD ± 10.9), 65% (8/17) were men, with a mean follow-up of 106 months (SD ± 121). Five patients had an intrahepatic thrombosis, twelve an extrahepatic one, and amongst the latter, three had extension to either the inferior vena cava or the mesenteric vein. A prothrombotic condition was found in 35% of cases, the most frequent were antiphospholipid syndrome and protein C resistance. Secondary prophylaxis with monotherapy (endoscopic ligation) was used in 4 patients (24%), and dual therapy (ligation plus beta blockade) was used in 13 (76%). Despite prophylaxis, rebleeding occurred in 71% of patients (12/17): 100% (4/4) of patients with monotherapy and 67% (8/13) of patients with dual therapy (p = 0.26). The mean propranolol dose of both, patients who had rebleeding and patients who did not was 80mg (p = 0.62). Five patients had a successful secondary prophylaxis and did not rebleed during their follow-up, in two of them a portosystemic shunt had been performed early after the diagnosis of portal hypertension (one mesocava shunt and one abdominal Sugiura), the other three were under secondary prophylaxis with dual therapy. The anatomic distribution of the thrombosis was not found to be an independent predictor for rebleeding. **Conclusions:** Regarding our results rebleeding rate in this group of patients seems to be high and independent of the chosen secondary prophylaxis strategy. Alternative therapies such as surgical portosystemic shunts should be considered in an early fashion in these patients. More studies with more patients are needed to confirm these results.