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ABSTRACT SECTION
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# XI NATIONAL MEETING OF THE MEXICAN ASSOCIATION OF HEPATOLOGY

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## I. MOLECULAR AND CELLULAR BIOLOGY

### 01
### CORRELATION OF CHEMOKINES AND METALLOPROTENASES WITH FIBROSIS DEGREE IN CHRONIC HEPATITIS C PATIENTS

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**Introduction.** Fibrosis is a scar response of a toxic agent or viral infection, such as hepatitis C virus. In the liver a chronic injury can lead to fibrosis, characterized by deposition of extracellular matrix whose synthesis depends mainly on hepatic stellate cells, which is activated by profibrotic mediators (PDGF and TGF) including changes such as: proliferation, chemotaxis, fibrogenesis, matrix degradation and release of cytokines and chemokines (CXCL). Degradation and tissue remodeling is conducted by metalloproteinases (MMP), whose levels could be altered in serum. **Objective.** Determinate MMP2, MMP7, MMP9, and CXCL10 in serum; and correlation with fibrosis degree in chronic hepatitis C (CHC) patients. **Material and methods.** A cross sectional, prospective, observational and descriptive study was developed. Twenty-seven patients with chronic CHC were include, both genders, over 18 years old, with compensated liver disease. Fibrosis degree was determined by fibroScan. After consent 10 mL of blood sample was taken, and MMP2, MMP7, MMP9, and CXCL10 was determined by Luminex technique. Descriptive statistics was performed, difference and correlation between the groups with Kruskal-Wallis and Spearman rho tests. **Results.** Mean age was 53.8 ± 12.6 years and for BMI 26.7 ± 4.1; 51.9% were females y 48.1% males. Values of the molecules in the 27 patients were as follows (pg/mL): MMP2 519,067 ± 347,883, MMP7 45,735 ± 40,752; MMP9 129,234 ± 87,928; CXCL10 121.7 ± 4.1. Fibrosis degree was classified as F ≤ 2, F3 y F4; whose frequencies were of 7, 9 y 11 subjects, respectively. There were no differences between the groups ($p > 0.05$). The Spearman tests did not showed significant correlations between fibrosis degree and the molecules**. Conclusions.** To this sample size we did not detect correlation between fibrosis degree and MMPs or CXCL10, however, high concentration of MMPs was found in serum of CHC patients.

DOI:.

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### 02
### REFLECTANCE SPECTROSCOPY MAY REPRESENT A COMPLEMENTARY TOOL TO LIVER BIOPSY FOR STAGING FIBROSIS: A PROOF OF CONCEPT

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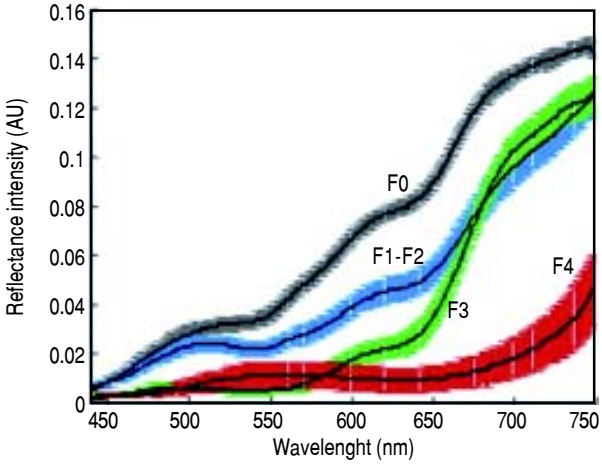
**Background.** A reflectance spectroscopy-based method to score fibrosis in human liver specimens has been developed and is reported here. **Material and methods.** Paraffin blocks containing human liver specimens were collected from the Department of Anatomy and Pathology of the Hospital General de México and included in the study with patient's written consent. The score of liver fibrosis was determined in each sample by two experienced pathologists in a single-blind fashion. Spectral measurements were acquired at 450-750 nm by establishing surface contact between the optical probe and the preserved tissue. **Results.** According to the histological evaluation, fourteen liver samples showed no evidence of fibrosis and were categorized as F0, fifteen hepatic specimens exhibited an initial degree of fibrosis (F1-F2), fourteen liver specimens showed a severe degree of fibrosis (F3), and seventeen samples exhibited cirrhosis (F4). The human liver tissue showed a typical diffuse reflectance spectrum related to the progressive stages of fibrosis. In F0 liver samples, the diffuse reflectance intensity gradually increased within the wavelength range of 450-750 nm. On the contrary, F1-F2, F3, and F4 specimens showed a corresponding 1.5, 2, and 5.5-fold decrease in the intensity of diffuse reflectance with respect to F0 livers. At 650 nm, all the stages of liver fibrosis were clearly distinguished from each other with high sensitivity and specificity (91 and 98%, respectively) (Figure 1). **Conclusions.** To our knowledge, this is the first study reporting a characteristic reflectance spectrum for each stage of fibrosis in human liver specimens. These results support the notion that reflectance spectroscopy may represent a complementary tool to liver biopsy for grading fibrosis.

This work was supported by grants 129316-M from CONACyT and Antonio Ariza-Cañadilla from Fundación Mexicana para la Salud to GE.




***(I.02) Figure 1.*** *Typical reflectance spectra in non-fibrotic and fibrotic hepatic tissue. Data are presented as the mean of the diffuse reflectance spectrum per group in a continuous black line. Standard deviation is illustrated by the color band surrounding each spectral mean.*

## 03
## CONNECTIVE TISSUE GROWTH FACTOR PEPTIDE LEVELS DURING LIVER FIBROSIS IN RAT

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**Background and aims.** Connective Tissue Growth Factor (CTGF/CCN2) is a protein involved in wound healing and scarring. Serum levels of CCN2/CTGF have been related to fibrosis in lung, skin and kidney. In a previous study we showed that CTGF/CCN2 expression increased according to fibrosis degree induced by $CCl_4$ in rat, however the peptide dynamics are still unknown in the both liver and serum during liver fibrosis. The aim of this study is quantify the hepatic and serum CTGF/CCN2 levels during the course of liver fibrosis in a rat model. **Material and methods.** Three month male Wistar rats weighing 250 ± 20 g were administered a different number of $CCl_4$ doses intraperitoneally (250 $\mu$L; 33% v/v in olive oil) in order to induce different fibrosis stages: F1 (8 doses), F2 (12 doses), F3 (20 doses) y F4 (40 doses) according to METAVIR score. A control group was included (F0). Livers were collected and fibrosis was established by histology (Sirius red). CTGF/CCN2 levels in liver tissue and serum were determined by ELISA. Results were analyzed by One-way ANOVA followed by Tukey test. Mean ± SD. $P < 0.05$ was considered significant. **Results.** CTGF/CCN2 peptide levels decreased in the liver as the fibrosis degree advances, being significantly different from intermediate to advanced stages (F2-F4) compared to control. (F0 = 2,913 ± 242; F1 = 2,522 ± 450; F2 = 1,943 ± 554; F3 = 1,629 ± 388; F4 = 1,601 ± 250 pg/mL n = 6), however serum levels showed no difference between groups or compared to the control group (F0 = 1,743 ± 271; F1 = 1,987 ± 330; F2 = 1,245 ± 273; F3 = 1,533 ± 487; F4 = 1,330 ± 107 pg/mL n = 6). **Conclusions.** The amount of CTGF/CCN2 protein present in the liver behaves in opposite way to its mRNA expression, which is increased from intermediate stages of fibrosis induced by $CCl_4$, however, CTGF/CCN2 serum levels did not change regardless of the severity of fibrosis. These results suggest that CTGF/CCN2 could have a different role in liver fibrosis compared to other tissues.

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## 04
## HISTOLOGIC CHANGES IN THE LIVER ASSOCIATED TO OBESOGENIC DIET AND CHRONIC ALCOHOL INTAKE IN MICE

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**Introduction.** Liver cirrhosis is one a most frequent causes of death in Mexico. Chronic alcohol intake is among the main etiologies for liver disease and is highly associated to cirrhosis mortality. At the same time Mexico is the first place worldwide in prevalence of obesity. Although both causes of liver disease coincide epidemiologically, no characterization of their interaction is available. We aimed to describe the interactions of a high fat diet (HFD) and alcohol intake at the histopathologic level in the liver. **Aim.** To identify histopathological changes in the liver associated with a HFD concomitantly with a chronic alcohol intake in mice. **Material and methods.** Six groups of C57BL/6, 8 week-old, male mice were obtained: (C) control, (EtOH) ethanol, (HFD) high fat diet, (EtOH + HFD) ethanol + HFD, these groups received 4 months of treatment. (HFD&EtOH): 1°HFD followed by 2°Etanol and, (EtOH&HFD): 1°Ethanol followed by 2°HDF: these two groups received the first treatment for 4 months followed by the second treatment for another 4 months. **Results.** Histopathologic changes were observed in the liver depending on the treatment received. EtOH group showed slight architectural changes compared to C but did not show steatosis. HFD had microvesicular-focal steatosis located in hepatocytes by the portal area (TP). EtOH + HFD exhibited a worsen impairment in architecture compared with HFD showing microvesicular-focal steatosis in hepatocytes located by the TP. In contrast HFD & EtOH showed microvesicular-focal steatosis in hepatocytes by the central vein (VC), whereas EtOH & HFD had macrovesicular-difuse steatosis in hepatocytes at both locations. No signs of fibrosis were observed. **Conclusion.** Changes in liver architecture depend on the insults received as well as the interaction between them; specific patters of liver damage according to both the insult and the hepatocyte location among the liver acinus were shown without fibrosis. In

mice the worst damage was caused by the chronic alcohol intake followed by a HFD.
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## II. CIRRHOSIS AND ITS COMPLICATIONS

### 01
### ADIPOSITY EXCESS, SKELETAL MUSCLE MASS DEPLETION AND THEIR CORRELATION WITH BODY MASS INDEX IN LIVER CIRRHOSIS

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**Background.** Patients with liver cirrhosis (LC) usually face a double burden of malnutrition characterized for sex-related changes in adiposity and skeletal muscle mass (SMM). **Objectives.** Determine the prevalence of adiposity excess (AE) and its mismatch with SMM depletion and the uncertain usefulness of the Body mass index (BMI) in patients with ascites according with LC progression. **Material and methods.** Our prospective study was performed to realize a nutrition-focused physical assessment (NFPA) of the adiposity and SMM depletion according with the mid-arm fat area (MAFA), mid arm-muscle area (MAMA) and the body mass index (BMI) as anthropometrical indicators; LC was classified according to the Child-Pugh score. **Results.** Female patients presents a higher prevalence of low fat reserve and high protein reserve (39.2% p = 0.04, 27.21%, p = 0.56). Male patients show a higher frequency of AE and SMM depletion (39.7% p = 0.03, 39.5% p = 0.001). 39 of the 211 patients show AE (18%) with a mean of BMI 31.3 (± 7.16). We propose BMI cut for normal protein reserve ≥ 23 kg/m$^2$ (Sn. 80% Sp. 73%), and 26.3 kg/m$^2$ for AE (Sn.77% Sp.73%). **Conclusion.** We described adiposity excess as a new concept and SMM depletion as a traditional concept, in patients with LC. We provide the prevalence of AE (18%), and we found that BMI tends to misclassified 23% of our patients in the MAFA criteria and 12.5% in the MAMA criteria. More long-term studies are needed to determine the impact of adiposity excess in the development of cirrhosis.
There is no conflict of interest. This work was sponsored by the government and has been fully subsidized by the Department of Gastroenterology at the Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán.

### 02
### DECOMPENSATION'S CAUSES REQUIRING HOSPITAL ADMISSION OF PATIENTS WITH CIRRHOSIS HEPATIC, EXPERIENCE IN THE HJM

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**Introduction.** Cirrhosis is the fourth cause of death in Mexico, a year more than 28,000 deaths occur because of this, it is considered a public health problem. Decompensated cirrhotic patients are the most frequent internment and one of the main causes of consultation in gastroenterology services cause. **Objective.** Determine the main causes of decompensated liver cirrhosis in patients hospitalized in the Hospital Juárez de México. **Material and methods.** A retrospective, longitudinal and descriptive study where patients were hospitalized in the Gastroenterology Service diagnosed with liver cirrhosis of any etiology were included was made; decompensation requiring income from January to December 2015. **Results.** 112 records were reviewed by 2015. The average age was 50 years predominance of male gender. The most frequent causes were alcohol (66.96%), hepatitis C (15.17%) autoimmune liver disease (10.71%) NASH (7.14%). Predominant complications were: variceal gastrointestinal bleeding (48.21%), encephalopathy (27.67%), spontaneous peritonitis (16.96%), hepatorenal syndrome (5.35%), and refractory ascites (1.78%). The total number of deaths was 38 cases: 68.42% male and 31.57% female; its causes were variceal gastrointestinal bleeding (36.84%), septicemia (23.68%) hepatic encephalopathy (18.42%), spontaneous bacterial peritonitis (13.15%) pneumonias (5.26%) hepatorenal syndrome (2.62%). **Conclusions.** In the Hospital Juárez de México the main cause of hospital admission was variceal gastrointestinal bleeding, followed by encephalopathy; of these the main cause of death was observed by variceal gastrointestinal bleeding and septic shock. Alcoholism remains the main etiology of cirrhosis predominating in males, as reported in epidemiological studies of Mexico.
The authors express no conflicts of interest.

### 03
### PREDICTING SHORT-TERM MORTALITY IN PATIENTS WITH ACUTE ON CHRONIC LIVER FAILURE USING HYPONATREMIA WITH CLIF-SOFA SCORE

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**Background.** CLIF-SOFA score has recently been proposed as diagnostic acute on chronic liver failure (ACLF). Criteria for chronic liver failure worsened hyponatremia is a common finding in cirrhosis and is associated with poor prognosis. There are few studies evaluating the association between hyponatremia and CLIF-SOFA score for predicting mortality in cirrhosis. **Objective.** To identify if hyponatremia is a predictor of short-term mortality associated with CLIF-SOFA score in patients with acute on chronic liver failure (ACLF). **Material and methods.** Retrospective, transversal, observational. Liver Cirrhosis patients hospitalized in the Gastroenterology were studied, serum sodium and CLI-SOFA score were quantified. **Results.** 88 patients were included of253 liver cirrhosis and ACLF. Women predominated in 75%. The average age was 55 years, 34.1% of cryptogenic etiology, 85.2% for Child-Pugh C, 62% of infectious causes and urinary tract infections (48%) as the main etiology, the average was 21 and 27 for MELD and MELD-Na, respectively. Patients with sodium < 126 mEq/L was 16% of the population, 92% of mortality, in univariate analysis; the

CLIF-SOFA ≥ 12 points had an odds ratio (OR) 28.85 (95% CI 3.65-228.35, p = 0.00) and CLIF-SOFA ≤ 11 points OR1.43 (95% CI 0.85-2.39, p = 0.30). In multivariate analysis, there was no statistical significance. **Conclusions.** The development of less hyponatremia of 126 mEq/L was associated with increased mortality in our study, with higher CLIF-SOFA 12 points. Hyponatremia maybe an independent risk factor for mortality CLIF-SOFA score ≤ 11 points.
Not Conflict of Interest.

## 04
## NON-WILSONIAN HEPATOLENTICULAR DEGENERATION AS A SIGN OF HEPATIC CIRRHOSIS

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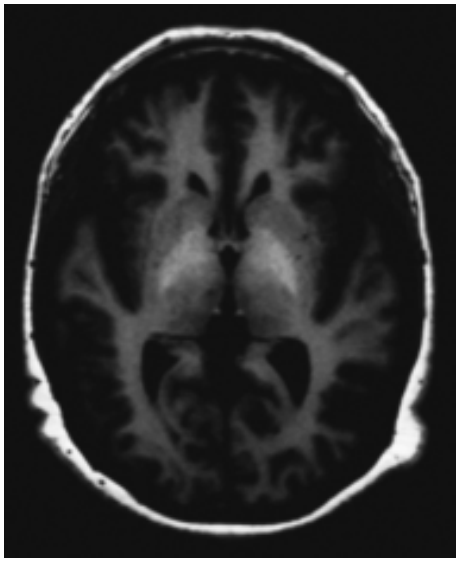
**Background.** Non-Wilsonian hepatolenticular degeneration (NWHD) is a neurological syndrome characterized by Parkinsonism, ataxia, cerebellar symptoms, and neuropsychiatric and cognitive disorders. It has been described in 2% of patients with chronic liver disease. Its physiopathology is not currently clear, but manganese deposits seem to be crucial. Its definite treatment has not been determined. Liver transplant is a therapeutic option, although its prognosis is variable. **Case report.** A 53-year old female was referred to the Neurology outpatient clinic due to dysarthria. The patient had no family history of liver diseases nor a personal history of allergies, blood transfusions or drug addictions. The patient's condition started on 2013 with self-limiting dysarthria and absence seizures. In October 2014, the patient experienced the same clinical presentation, in addition to episodic falling syndrome, reason why the patient sought medical attention. A Parkinsonian syndrome, pancerebellar syndrome, dysarthria, pyramidal syndrome and atavistic reflexes were found on the physical examination. Lab tests showed liver tests abnormalities and thrombocytopenia (Table 1). The patient was diagnosed with liver cirrhosis (Child-Pugh B [9 points] and MELD [14 points]). The viral hepatitis screening, iron profile and autoimmune liver disease serology tests were negative. Urine copper and serum ceruloplasmin levels were within normal ranges. The magnetic resonance showed an increased signal density of the basal ganglia, predominantly of the putamen and globus pallidus (T1-weighted sequence, Figure 1). The abdominal CT scan showed chronic liver damage. 3D reconstruction showed a spontaneous portosystemic shunt. **Discussion.** HWND is an unusual neurogenerative disease in patients with liver cirrhosis. Its clinical findings are similar to those of Parkinson's disease, with imaging characteristics suggestive of Wilson's disease. Early detection is vital to continue with the diagnostic approach and to define the most appropriate treatment. The prognosis for these patients is uncertain since no impact has been shown on neuropsychiatric symptoms.



***(II.04) Figure 1.*** *Increased signal intensity of basal ganglia, predominantly of the putamen and globus pallidus (T1-weighted sequence).*

## 05
## DECOMPENSATED LIVER DISEASE; ALERT FOR FINDING MINIMAL HEPATIC ENCEPHALOPATHY (MHE)

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**Introduction.** EHM is a liver decompensation underestimated in the context of care and patient follow-up with cirrhosis, targeted epidemiological studies are needed to this specific group, in order to optimize strategies for prevention and early intervention. **Objective.** To know and associate clinical, biochemical and prognostic characteristics in patients with minimal hepatic encephalopathy in a central Mexican 3rd level. **Material and methods.** Epidemiological, analytical, transversal, open study conducted from March to May 2015, CMN La Raza, IMSS. In patients with independent liver cirrhosis sex, Child-Pugh, MELD, or degree of portal hypertension, excluding that with encephalopathy manifests, neurological disease, psychiatric,

**(II.04) Table 1.** Lab results.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total bilirubin | 3.2 | mg/dL | GGT | 39 | UI/L | WBC | 3.7 | x10$^3$ |
| Direct bilirubin | 0.7 | mg/dL | Alb | 3.2 | mg/dL | Hgb | 15.4 | g/dL |
| ALT | 29 | UI/L | Glu | 76 | mg/dL | Hct | 45.4 | % |
| AST | 53 | UI/L | BUN | 10 | mmol/L | Platelets | 71 | K/uL |
| AP | 243 | UI/L | Cr | 0.5 | mmol/L | INR | 1.3 | |

visual, alcohol intake, antibiotics or sedatives in the previous 3 months, using psychometric tests EHM PHES diagnosis was made, demographic, clinical, biochemical and prognostic data analyzed by SPSS 20.0 is collected, it was considered statistically significant $p < 0.05$. **Results.** The final sample consisted of 72 patients, 40.3% EHM, 75% women, basic education 51.7%, autoimmune ethology 41%, with ascites (22.2%) with a risk for the development of EHM (OR 1.76, 95% CI. 9-3.4 P 0.077) without ascites (77.8%) (OR 0.54, 95% CI 321-919 P 0.040), Child Pugh A 31% (95% CI OR.29 - 109-797-P 0.27), Child Pugh BC (OR 1.67, 95% CI 1.08-2.41 P 0.27), Baveno V (3,4,5) (OR 1.44, 95% CI .970-2.15 P 0.102), MELD < 12 51% (OR 95% .208 -. 070 to 619-P.004) ≥ 13 48.3% (OR 2.18, 95% CI -1.12-3.97 P 0.007). **Conclusion.** The main causes associated with EHM was the presence of ascites as independent risk factor, clinical and biochemical data in its isolated evaluation no significant association was found decompensated disease was associated with the development of EHM mainly with the MELD model.

## 06
## DETERMINATION OF LIVER AND SPLEEN STIFFNESS BY ELASTOGRAPHY (FIBROSCAN) IN PORTAL HYPERTENSION WITHOUT CIRRHOSIS (PORTAL VEIN THROMBOSIS/BUDD-CHIARI SYNDROME) THEIR CORRELATION AND DEPENDENCE WITH ESOPHAGEAL VARICES

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**Background.** Elastography has not been validated for non-cirrhotic liver disease, which is not associated with liver fibrosis, patients who progress to cirrhosis in cases of in/outflow obstruction are not detected easily. **Objectives.** To assess the degree of liver and spleen stiffness by elastography in hardness with portal hypertension without cirrhosis: portal vein thrombosis (PVT) and Budd-Chiari (SBC) syndrome. Correlate the value of fibroscan with time evolution and the degree of portal hypertension through the presence of esophageal varices. **Material and methods.** Cross-sectional study in which patients with PVT/SBC were included, during February to July 2015, elastography of liver and spleen were performed with fibroscan (computer-Ecosens-502), fat measurement was done with CAP. Records were reviewed for demographic and clinical data. **Results.** 18 patients, 9 men (50%) were included. The mean age was 41 years old and 5 patients had a splenectomy history. Distributed pathology: PVT in 15 patients (83%) and Budd-Chiari syndrome in 3 patients (17%). PVT patients had a mean of 6.7 kPa (2.7-19.1) and Budd-Chiari 63.3 (48.8-75). Two patients with PVT had > 15 kPa, and all three SBC patients had > 15 kPa. Therefore 5 patients were diagnosed with cirrhosis elastography. Nobody was diagnosed with liver cirrhosis at the time of the study. Eleven patients (61%) had esophageal varices (endoscopy) without statistical significance by correlating liver or spleen elastography in the presence of esophageal varices. Although more than half of the patients have varices, only 1 patient had bleeding episode (PVT). Increased liver stiffness was independent to the years of evolution of the disease. **Conclusions.** The fibroscan is useful for diagnosis liver cirrhosis in patients who have not presented indication for biopsy or decompensation. Patients with PVT have low values kPa (F1-F3) compared to Budd-Chiari (F4). Probably the obstruction of the hepatic veins is more fibrogenic than portal obstruction, although there is no correlation between liver or spleen elastography with the presence of esophageal varices.

## 07
## GASTROINTESTINAL BLEEDING VARICEAL: BE PERFORMED WITH DIAGNOSTIC LABORATORY STUDIES?

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**Introduction.** Upper gastrointestinal bleeding is defined as that produced before the angle of Treitz, between its causes include gastric ulcer, duodenal ulcer, gastric cancer and variceal hemorrhage, mortality ranges from 3.5 to 7.4%. **Objective.** To determine laboratory studies that differentiate variceal upper gastrointestinal bleeding of nonvariceal. **Material and methods.** Patients who consulted the emergency department for upper gastrointestinal bleeding from June 2015 to January 2016. Type of study: Retrospective, transversal and comparative study. Variables analyzed: gender, age, urea, creatinine, BUN, hemoglobin, serum calcium, lactate dehydrogenase, platelet count, prothrombin time and International Normalized Ratio. Statistical analysis: the IBM SPSS version 22 Statistics® program for obtaining medium with confidence interval of 95% in addition to obtaining the p value was used. **Results.** 100 cases, 50 for each group studied, 42 women and 58 men, average age 53.96 and nonvariceal variceal hemorrhage were analyzed 57.80; no statistically significant difference was found in both groups for the value of Urea ($p = 0.830$), creatinine ($p = 0.403$), BUN ($p = 0.837$), relationship urea / creatinine ($p = 0.478$), hemoglobin ($p = 0.476$ ). If there was significant difference in the value of serum calcium ($p = 0.003$), lactate dehydrogenase ($p = 0.008$), platelets ($p = 0.0001$), prothrombin time ($p = 0.005$) and International Normalized Ratio (INR) ($p = 0.005$). **Conclusions.** The serum calcium, lactate dehydrogenase, platelet count, prothrombin time and International Normalized Ratio may be useful in differentiating upper gastrointestinal bleeding variceal non-variceal, which will influence the indicated treatment, especially in centers where not always endoscopic studies are available.

## 08
## NATURAL HISTORY OF CIRRHOSIS AND ASSOCIATION WITH NUTRITIONAL STATUS IN MEXICAN POPULATION

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**Background and aims.** The progression to decompensated stages of cirrhosis increases mortality risk by more than 50%. However, the behavior of the progression of cirrhosis in Mexican patients and the impact of malnutrition on the rate of decompensation is unknown. The aim of this study is to know the development of the natural history of cirrhosis in Mexican patients and to determine their association with nutritional status. **Material and methods.** In a prospective cohort from April 2014 to June 2015, we evaluated patients with cirrhosis of a different etiologies. During follow-up, rate of decompensation, according to Baveno IV classification was evaluated. Nutritional status was assessed by Subjective Global Assessment, classifying patients as well nourished, at risk of malnutrition and malnourished. The association between nutritional status and decompensation was analyzed using $\chi^2$ the strength of association was analyzed by univariate logistic regression. **Results.** Thirty-nine patients were evaluated, 54% were female, the most common etiologies were alcoholism (41%), and hepatitis C virus (31%). Means of age and body mass index were 58 ± 10 years and 27.3 ± 4.0 kg/m$^2$, respectively. At the basal evaluation, 38% of patients were in compensated stages, while 61.6% were decompensated with ascites and/or variceal bleeding history. In the one year follow up 18% of compensated patients progressed to stages of decompensation, while 26% of decompensated patients died (Figure 1). Malnourished patients presented higher risk of developing ascites at 3 months OR 1.4 (95% CI 1.1-1.18, p = 0.03). **Conclusion.** In Mexican population, progression of cirrhosis and mortality is high. The presence of malnutrition is associated with ascites, increasing the risk of decompensation.

## 09
## INDISCRIMINATE USE OF PROTON-PUMP INHIBITORS IN CIRRHOTIC PATIENTS AS RISK FACTOR ASSOCIATED WITH A GREATER FREQUENCY OF BACTERIAL INFECTIONS

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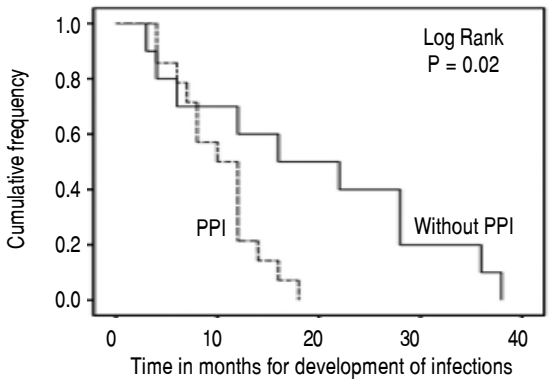
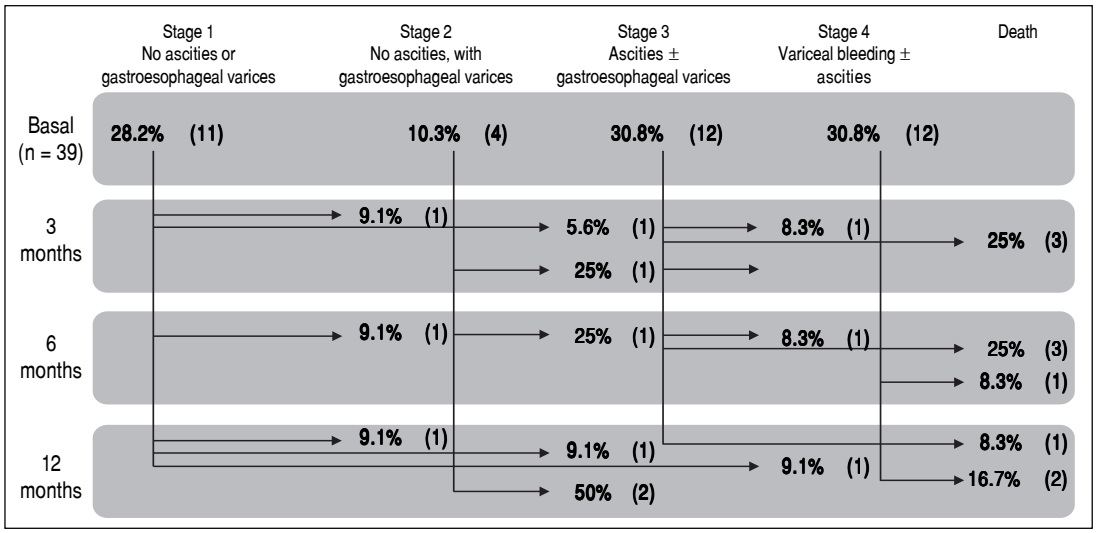
**Introduction and objective.** There is controversy about if the chronic use of proton-pump inhibitors (PPI) increases the risk of infections in patients with cirrhosis. The objective of this study was to evaluate if the chronic use of PPI is a risk factor related to a greater risk of infections. **Material and methods.** A cohort study which included cirrhotic patients with and without chronic use of PPI. We compared between groups using *t* Student's test or Mann-Withney's U test. The multivariate analysis to evaluate risk factors was performed with Cox regression. **Results.** 113 patients were included, 57.5% were women. A 61.1% consumed PPI. In the univariate analysis, 10.6% of




***(II.09) Figure 1.*** *Kaplan-Meir curves comparing the development of bacterial infections between the PPI-exposed and the non-exposed cohorts of patients with cirrhosis.*




***(II.08) Figure 1.***

Child A patients developed some kind of bacterial infection *vs.* 36.2% of Child B or C (HR = 3.4; 95% CI: 1.5-7.6, P = 0.001). In the cohort of patients exposed to PPI, 31.8% developed some kind of bacterial infection *vs.* 14.5% in the non-exposed cohort (HR = 2.1; 95% CI: 1.1-4.3; P = 0.03). The median of time for develop infections in the exposed cohort to PPI was lower than in the non-exposed: 10 months (interquartilic range 7-12 months) *vs.* 16 months (interquartilic range 6-28 months) respectively (P = 0.02) *(Figure 1)*. In the multivariate analysis, the state of decompensated cirrhosis was no significant, while the chronic consumption of PPI was associated with an increase in the risk of infections (HR = 3.38; 95% CI: 1.1-10.6, P = 0.037). **Conclusions.** The chronic use of PPI in patients with cirrhosis is a risk factor associated with the development of bacterial infections.

## 10
## PROTEIN-CALORIE MALNUTRITION NEGATIVELY IMPACTS ON THE QUALITY OF LIFE OF PATIENTS WITH CIRRHOSIS

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**Background.** Protein-calorie malnutrition (PCM) is a common complication in patients with cirrhosis. The chronic liver disease questionnaire (CLDQ) was designed specifically to evaluate the quality of life in patients with chronic liver disease. **Objective.** To compare if there is impairment of quality of life of cirrhotic patients with PCM *vs.* us those well-nourished. **Material and methods.** An observational, analytic, transversal study which included patients with cirrhosis for any etiology. We evaluated the nutritional status through the Global Subjective Assessment (GSA) and we applied the CLDQ questionnaire. We compared between groups using Student's t test. **Results.** Were included 127 patients, 70 women (55.1%). About the nutritional state according to the GSA, 58 patients (45.7%) were well-nourished, 66 patients (52%) had mild-moderate malnutrition, 3 patients (2.4%) had severe malnutrition. According with the CLDQ questionnaire, patients with malnutrition had more significant symptoms (Table 1). **Conclusions.** The PCM impairs the quality of life in patients with cirrhosis. The CLDQ questionnaire is a useful tool to evaluate the quality of life in the clinical setting.

**(II.10) Table 1.** Comparison between malnourished and well-nourished cirrhotic patients regard to the items of quality of life that are evaluated by the CLDQ questionnaire.

| CLDQ items | Well-nourished | Malnourished | *P* |
|---|---|---|---|
| Fatigue | 3.69 ± 1.37 | 2.94 ± 1.26 | 0.002 |
| Bodily Pain | 4.14 ± 0.87 | 3.57 ± 0.85 | 0.0001 |
| Dyspnea | 6.16 ± 0.95 | 5.33 ± 1.43 | 0.0001 |
| Hiporexia | 6.12 ± 1.01 | 3.55 ± 1.55 | 0.0001 |
| Decreased level of energy | 4.91 ± 1.22 | 2.90 ± 1.45 | 0.0001 |
| Trouble lifting heavy objects | 5.62 ± 0.83 | 4.09 ± 1.39 | 0.0001 |
| Decreased level of energy | 5.19 ± 1.10 | 3.20 ± 1.49 | 0.0001 |
| Abdominal bloating | 5.72 ± 1.53 | 4.67 ± 2.06 | 0.001 |
| Unhappiness | 5.12 ± 1.08 | 4.41 ± 1.53 | 0.003 |

## 11
## ASSOCIATION BETWEEN NUTRITIONAL STATUS AND QUALITY OF LIFE IN PATIENTS WITH CIRRHOSIS

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**Background and aims.** Quality of life (QoL) is affected in patients with cirrhosis. It has been observed a potential association between nutritional status and QoL in cirrhosis. The aim of this study is to determine the association between nutritional status and QoL in patients with cirrhosis. **Material and methods.** We evaluated 66 patients with cirrhosis, nutritional status was classified according to Subjective Global Assessment as well nourished, risk of malnutrition and malnutrition. A questionnaire of frequency of food consumption was applied. QoL was assessed by Spanish version of Liver Disease Quality of Life Questionnaire. Analysis of QoL domains and nutritional status was performed by one way ANOVA. **Results.** The 50% were female, mean of body mass index and age were 27.6 ± 5.9 kg/m$^2$ and 58 ± 10 years respectively. Most of the patients 27.3% were A Child-Pugh Score, 29% B and 6% C. Prevalence of well-nourished patients was 32%, while patients in risk of malnutrition was 53% and malnourished patients was 15.2%. Mean global QoL was 3.9 ± 0.8; means of each domain of questionnaire was shown in table 1. Malnourished patients presented lower score of global QoL, as well as activity, fatigue and emotional symptoms (Table 1). There is no association between food consumption and QoL. **Conclusion.** In patients with cirrhosis, QoL is associated with nutritional impairment. However frequency of foof consumption was not related.

**(II.11) Table 1.**

| Domain | All patients μ ± SD | Well-nourished μ ± SD | Malnourished μ ± SD | P |
|---|---|---|---|---|
| Abdominal symptoms | 5.4 ± 1.8 | 5.8 ± 1.7 | 4.5 ± 2.3 | 0.16 |
| Fatigue | 4.1 ± 1.6 | 5.1 ± 1.3 | 3.0 ± 1.6 | **0.001** |
| Systemic symptoms | 4.3 ± 1.2 | 4.6 ± 1.3 | 4.1 ± 0.8 | 0.54 |
| Activity | 5.0 ± 1.5 | 5.4 ± 1.2 | 4.0 ± 1.9 | **0.04** |
| Emotional | 4.4 ± 1.2 | 5.1 ± 1.2 | 3.7 ± 1.3 | **0.009** |
| Worry | 4.1 ± 1.6 | 4.5 ± 1.5 | 3.7 ± 1.2 | 0.26 |
| Global | 3.9 ± 0.8 | 4.3 ± 0.8 | 3.2 ± 0.7 | **0.002** |

## 12
## OBESITY AS A FACTOR OF LIVER CIRRHOSIS POOR PROGNOSIS

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**Introduction.** The prevalence of obesity is increasing worldwide, attributing 17% within the etiologies of cirrhosis. Obesity has been identified as an independent risk factor for hepatic decompensation, characterized by a dysfunction of the immune system and a state of low-grade inflammation. This alteration has been hypothesized of increased susceptibility to infections in obese individuals. It has not yet been determined whether these findings are applicable to cirrhotic patients. **Objective.** To evaluate whether the presence of obesity leads to more events cirrhotic decompensation. **Material and methods.** A retrospective cross-sectional study, the statistics are expressed in percentages and averages. Outpatient 2015 with complete record were classified according to body mass index (BMI) in normal weight, overweight, obesity grade I, grade II obesity, obesity grade III, according to the parameters established by the Official Mexican Standard. Considering hospitalizations for bleeding, infections and encephalopathy. Patients with ascites and spontaneous bacterial peritonitis were excluded. **Results.** 237 patients in total, 63.7% female, mean age 57.1 years (range 30-85), cause of liver cirrhosis 29.9% for alcohol, 21.5% for HCV. 65.4 % Child-Pugh stage A, 31.6% Child-Pugh B, 2.9% Child-Pugh C. 55 patients had normal weight, 38.1% were hospitalized 52.3% being by variceal hemorrhage (HV), 23.8% by encephalopathy (E). 83 overweight patients, 65% were hospitalized 53.7% of these HV, 12.9% E, 24% other causes. Obesity grade I had 63 patients, 34.9% being hospitalized, 50% various reasons, 45.4% for HV. Obesity degree II 29 patients, 75.8% were hospitalized, 86.3% by HV. Grade III obesity patients had 7, hospitalized 28.5%, 50% HV, 50% by E. **Conclusion.** Identifying patients with high BMI is necessary, since these have more hospitalizations mainly by variceal bleeding, being important wider dissemination about the complications of obesity not only in the general population but also in cirrhotic.
The authors have no conflicts of interest.

## 13
## EFFECT OF THE COMBINATION OF CARVEDILOL AND SIMVASTATIN IN PORTAL PRESSURE GRADIENT IN PATIENTS WITH CIRRHOSIS AFTER VARICEAL BLEEDING (SECONDARY PROPHYLAXIS)

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**Background.** There are not background of carvedilol/simvastatin in secondary prophylaxis. **Objective.** Evaluate the effect of the combination of carvedilol/simvastatin in the hepatic venous pressure gradient (HVPG) in secondary prophylaxis after variceal bleeding. **Material and methods.** Preliminary report of seven cirrhotic patients who failed to secondary prophylaxis (propranolol/endoscopic variceal ligation). Measurement (HVPG) were performed once the variceal bleeding was controlled and vasoactive drugs were stop, patients received 6.25 mg/day of carvedilol and 20 mg/day of simvastatin. After a week, the medication dose increased in accordance to the heart rate, blood pressure and adverse effects. A second HVPG measurement was performed after two weeks of treatment and the patients were grouped according to the HVPG response: a) Complete-responders: decreased by >20% of the HVPG or final HVPG < 12 mmHg, b) Partial-responders: decreased by > 10% but < 20% and > 12 mmHg; c) No-responders: without decreased in HVPG. **Results.** Age was 63 ± 21 years old. The more frequently etiology was autoimmune cholangitis 42.86%, followed by autoimmune hepatitis 28.57%, NAFLD 14.9% and cryptogenic cirrhosis 14.9%. The mean of HVPG decreased for the complete responders (n = 2) and was -25.9%, with a mean dose of 9.4 ± 3.1 mg/day of carvedilol and 30 ± 10 mg/day of simvastatin. Partial responders (n = 3), the mean of HVPG decreased by -23.8%, with a mean dose of 10.4 ± 2.9 mg/day of carvedilol and 40 mg of simvastatin. No responders (n = 2) the HVPG increased +13.3%, mean doses 18.8 ± 6.3 mg/day of carvedilol and 40 mg of simvastatin. None of the patients presented deleterious effects in systemic hemodynamics and adverse effects. **Conclusions.** Our data in seven patients show: 71.4% of the patients responded to the medication. This is not a randomized study therefore it cannot be evaluated drug action independently. We suggest that the total responders should be followed without endoscopic control. Partial responders could be follow with both medication and endoscopic control. No responders needs only endoscopic control. Further randomized studies are needed to evaluate and compare the effect of carvedilol versus propranolol in secondary prophylaxis.

## 14
## COMPARISON BETWEEN LACTULOSE, L-ORNITHINE L-ASPARTATE, OR RIFAXIMIN, *VS.* PLACEBO, AS PRIMARY PROPHYLAXIS TO AVOID THE DEVELOPMENT OF HEPATIC ENCEPHALOPATHY AFTER VARICEAL BLEEDING IN CIRRHOTIC PATIENTS

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**Introduction and objective.** Variceal bleeding (VB) is the second most important precipitating factor related to the development of episodic hepatic encephalopathy (HE); near to 40% of cirrhotic patients with variceal bleeding develop this complication; to date there are no recommendations to prevent this complication. The objective of this study was to compare if primary prophylaxis with lactulose, or L-ornithine L-aspartate (LOLA), or rifaximin, in cirrhotic patients with VB, is better than placebo to avoid the development of HE. **Material and methods.** A randomized, double-blind, placebo-controlled clinical trial, which included cirrhotic patients with VB, without minimal or

clinical HE at admission, without other chronic diseases, without alcohol consumption greater than 6-month, without infections, without previous treatment with any of the drugs used in this study. All of them signed the consent form. Patients were randomized to receive treatment for 7 days: 1) Placebo; 2) Lactulose 30 mL per oral thrice in day (tid), and then adjusted to dose-response; 3) Rifaximin 400 mg per oral tid; 4) LOLA 10g intravenous a day. Sample size was calculated with the formula for hypothesis testing to compare two proportions, requiring 18 patients per group and 20% additional for possible losses. **Results.** 97 patients were evaluated, 15 met some exclusion criteria. The basal characteristics were similar between groups. Comparatively with placebo, the frequency regard to the development of HE was: Lactulose (54.5 vs. 27.3%; OR = 0.3, 95%CI 0.09-1.0; P = 0.06); LOLA (54.5 vs. 22.7%, OR = 0.2, 95%CI 0.06-0.88; P = 0.03); rifaximin (54.5 *vs.* 23.8%; OR = 0.3, 95%CI 0.07-0.9; P = 0.04). There was no significant difference between the three groups receiving any anti-ammonia drug (P = 0.94). In the group receiving lactulose, 59.1% had diarrhea, 45.5% had abdominal discomfort, bloating and flatulence. Two patients (10%) treated with lactulose developed spontaneous bacterial peritonitis (SBP) due to *E. coli*, one of them die due to recurrent VB. A patient (4.5%) in the placebo group developed SBP *(E. coli)*. There were no other adverse effects. **Conclusions.** This is the first study that evaluated anti-ammonia drugs in this clinical scenario. Anti-ammonia drugs, particularly LOLA and rifaximin, proved to be effective to prevent the development of HE in those with VB, the second most common precipitating factor.

## 15
## LIVER CIRRHOSIS DECOMPENSATION ACCORDING TO ALBI SCORE

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**Background and aim.** The importance of knowing liver function in patients with liver cirrhosis has led to create different prognostic scales both mortality and decompensation. The ALBI score has been used in patients with hepatocellular carcinoma (HCC), however could also be used in patients with liver cirrhosis without HCC. **Primary objective.** To assess the use of ALBI scale prognosis in liver cirrhosis decompensation. **Material and methods.** Cross-sectional descriptive retrospective in patients with diagnosis of liver cirrhosis from January 2015 to January 2016 hospitalized by variceal upper gastrointestinal bleeding accompanied by hepatic encephalopathy (HE) and / or spontaneous bacterial peritonitis (SBP). ALBI score was used according to grade I ≤ -2.6, grade II > -2.6 - ≤ -1.39 and grade III > -1.39. They were classified according to etiology of bleeding in large esophageal varices of Baveno (LEVB) isolated gastric varices 1 (IGV1), gastroesophageal varices (GOV2), LEVB-GOV1, LEVB-GOV2. Only patients with etiologies alcoholic, steatohepatitis, hepatitis C virus, autoimmune hepatitis and primary biliary cirrhosis were included and other causes were excluded. Average percentages and analysis were applied. **Results.** 64 patients, 35 male (54.6%) and mean age 55.8 years, female 29 (45.3%) with mean age 69.9 years were analyzed. Nine patients were obtained in grade I (LEVB 6, IGV1 2, GOV2 1 without HE or SBP), grade II were 33 patients (LEVB 17, IGV1 2, GOV2 6, LEVB-GOV1 2, LEVB-GOV2 6, EH 6 and PBE 1), and the grade III were 22 (LEVB 19, GOV2 2, LEVB-GOV1 1, HE 9 and SBP 2). **Conclusions.** According to the results obtained the degree of ALBI correlates with greater decompensation, according to this study grade III had a higher number of hepatic encephalopathy, spontaneous bacterial peritonitis associated with upper gastrointestinal bleeding and *vice versa* for grade I, so this scale could be used to forecast decompensation.

## 16
## RADIOFREQUENCY ABLATION TREATMENT OF GASTRIC ANTRAL VASCULAR ECTASIA (GAVE) IN PATIENTS WITH LIVER CIRRHOSIS. REPORT OF TWO CASES

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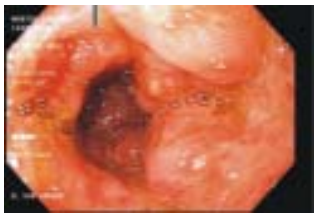
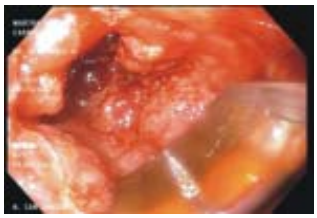
**Introduction.** The gastrointestinal bleeding represent more than a 25% mortality in patients with hepatic cirrhosis. The GAVE represent 4% of the non-variceal upper digestive tract bleeding, in cirrhotic patients there is a prevalence of 12%. These are patients who requiring frequent hospitalizations for bleeding, chronic anemia, multiple transfusions and endoscopic procedures. Surgery is occasionally used for patients who failed endoscopic and medical therapy but it is associated with high morbid mortality. The ablation with radiofrequency (HALO system) in GAVE allows a greater penetration capacity in the tissue achieving a uniform destruction of the vascular ectasia area. Case 1: 75 year old female with decompensated Liver Cirrhosis Child Pugh C MELD 24, secondary to non-alcoholic steatohepatitis. Case 2: 61 year old female with breast cancer history coursing -free period disease, DM2 and decompensated Liver Cirrhosis Child Pugh B MELD 10, secondary to chronic infection for active HCV. They have had multiple episodes of digestive tube bleeding secondary to GAVE, with chronic anemia, multiple hospitalizations, blood transfusions and endoscopic procedures. Treated with ligature and Argon Plasma without improving the bleeding recurrence. Considerating them as refractory to treatment, a new therapy is realized based on Radiofrequency with HALO system, without complications during the procedure (Figures 1 and 2). Patients have received two sessions within three months, with hemoglobin stabilization and without the presence of bleeding or the need of transfusions, being considered this endoscopic therapy the most effective procedure at the moment. A hemoglobin increase was found, with a lower number of sessions and decrease rate in complications. **Conclusion.** For patients with GAVE, and especially for those refractory to conventional treatments, ablation therapy with Radiofrequency is a new endoscopic option with promising results which require a greater evaluation.



**(II.16) Figure 1.** *GAVE before the treatment with radiofrequency.*



**(II.16) Figure 2.** *GAVE after the treatment with radriofrequency.*

## 17
## NON-SELECTIVE BETABLOCKERS AS AN INDEPENDENT RISK FACTOR FOR DEVELOPMENT OF SPONTANEOUS BACTERIAL PERITONITIS WITH DECOMPENSATED LIVER CIRRHOSIS

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**Introduction.** Spontaneous bacterial peritonitis is a mayor complication of liver cirrhosis. Among the risk factors is an advanced degree of liver failure, hyponatremia < 125 mmol/L, low albumin, MELD > 22. The use of nonselective beta-blockers may alter the hemodynamic profile, increasing the risk of bacterial translocation and thus the risk of spontaneous bacterial peritonitis. **Material and methods.** The aim of the study was to determine whether the use of non-selective beta blockers in patients with decompensated cirrhosis is an independent risk factor for the development of spontaneous bacterial peritonitis. A study of cases and controls, which included patients with decompensated cirrhosis diagnosis either hepatic encephalopathy, variceal bleeding or ascites was performed. Two groups one peritonitis and one without spontaneous bacterial peritonitis were assigned, we studied risk factors such as non-selective beta blockers, proton-pump inhibitor, low albumin, variceal hemorrhaging, advanced liver failure determined by scale of Child-Pugh grade Meld. Multivariate analysis was performed as statistical test. **Results.** Of the 82 selected patients, 4 were excluded in total presence of malignancy. The average age was 54 years in both groups, with a predominance of the female gender, it was determined that the use of non-selective beta-blockers was not an independent risk factor for the development of spontaneous bacterial peritonitis with a 0.177 p. As the use of proton-pump inhibitor was not a risk factor with p.126. **Conclusions.** The use of nonselective beta-blockers as primary or secondary prophylaxis is not an independent risk factor for the development of spontaneous bacterial peritonitis.
This study doesn't have any sponsor.

## 18
## *STREPTOCOCCUS SALIVARIUS* AS CAUSE OF SPONTANEOUS BACTERIAL PERITONITIS. CASE REPORT

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**Introduction.** Spontaneous bacterial peritonitis (SBP) it's a serious infection, with rates mortality between 20-40%. *S. salivarius* is a Gram-positive bacteria, regular guest of the oral flora, gastrointestinal, genitourinary. Associated with meningitis and endocarditis, had a few reports of SPB in patients with cirrhosis transplant list, post-transplant and pancytopenic, causing severe bacteremia. **Objective.** Present the case of a complicated cirrhotic patient with SPB by *S. salivarius*. **Case report.** Male of 57 years with a cryptogenic cirrhosis in 2 months had loss of weight (about 5 kg in 2 months), fatigue, weakness, fever night, increased abdominal and generalized abdominal pain of moderate intensity, predominantly in mesogastric and concomitantly lower abdomen refers dysuria, urinary frequency and urgency, with decreased urinary volume and edema in the lower limbs; PE: P/A:70/50, FC:84x' FR 22x', T: 37 °C, generalized jaundice, abdomen with ascites grade II and positive rebound, edema (3/3) knee. LT: cytological and cytochemical ascites fluid: yellow, slightly opaque, Glu 78 mg/dL, TP: 0.4 g/dL, cellularity: 1687/mm$^3$, LDH: 58 U/L, PMN: 96%, MN: 4%. TB: 14.6 mg/dL, DB: 14.0 mg/dL, LDH 293 U/L, AST 148 IU/L, TGP 76 IU/L, Ca: 8.3 mmol/L, Cl 97 mmol/L, k: 3.3 mmol/L, Na: 130 mmol/L, Glu: 74 mg/dL, Cr: 1.5 mg/dL, Bun 36 mg/dL, Amylase: 64 Ul, Lipase: 31 Ul, Leu: 7,100 mm$^3$, Neu: 6,000 mm$^3$, Lyn: 550 mm$^3$, Hb: 11.9 g/dL, Hto: 34.2%, MCV 104 fl, HCM. 36.2 pg, Plts: 164,000 mm$^3$, TP: 18.5",TP (39.7%), INR: 1.59, TTP: 30.7", Fib: 394 mg/dL, empirically treatment with ceftriaxone and albumin for 3 days unanswered, decrease urinary, creatinine 3.2 g/dL with encephalopathy GII. Received result positive of blood culture for *S. salivarius*. Changing the antibiotic meropenem unanswered, died within 48 h. **Discussion.** *S. salivarius* PBE theories mentioned: affects the permeability of the digestive tract to enteric bacteria. Cefotaxime has been efective in PBE by *S. salivarium.* **Conclusion.** It's important take ascites in blood culture in all patients with SPB.

# III. AUTOIMMUNE AND CHRONIC CHOLESTATIC DISEASES

## 01
## BONE DISEASE IN PRIMARY BILIARY DISEASE

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**Background and aim.** The prevalence of osteoporosis / osteopenia ranges in 30% of patients with primary biliary cirrhosis (PBC) and is associated with fractures in 7-35%. The imbalance between resorption and bone remodeling is the cornerstone of the pathophysiology since deficiency osteocalcin is documented;

additionally, cholestasis interferes on osteoblast function and promotes apoptosis, and limit intestinal absorption. Intake corticosteroids, hypogonadism, vitamin D deficiency and malnutrition are concomitant factors to its progression. However, although there are many studies on coexistence and established treatment, there is no information on the natural history of osteoporosis in PBC, so our goal is to prove its existence from the early stages of the disease. **Material and methods.** It is a retrospective, observational and descriptive study, which the medical records of 16 patients with histopathologic diagnosis of CBP were analyzed, 2 patients were excluded due course of sobreposition syndrome with autoimmune hepatitis, 1 report liver cirrhosis in histopathology report and 1 had no bone densitometry report. **Results.** 13 patients were analyzed analyzed, the average age is 57.2 years, 100% are female 7 (53.8%) reported osteopenia on densitometry (DE < 1.5), 4 (30.7%) reported osteoporosis (DE ≤ 2) and 2 (15.3%) were reported normal. No patient has reported associated fracture. Histopathology studies reported in phase I 31% (4) and stage II 69% (9). **Conclusions.** Given the results of the reports of bone densitometry DE < 1.5 at 84.5% at diagnosis, confirmed by histopathology in early stages (stages I and II) we conclude that the bone injury in CBP courses from early stages of the disease what must be taken into account to initiate appropriate treatment from diagnosis of CBP.

### 02
### HGF INDUCES A PROTECTIVE EFFECT IN A MOUSE MODEL OF CHOLESTASIS

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**Background.** Cholestatic liver diseases are among the most serious diseases affecting the liver. Treatments are not optimized; more research is necessary in order to improve treatment options. It has been observed that hepatocyte growth factor (HGF) can display protective effects that could support conventional therapies against cholestasis. **Objective.** The aim of this work was to address the protective effect of HGF in cholestasis induced by alpha-naftylisotiocianate (ANIT). **Material and methods.** CD1 mice were treated with ANIT (60 ug/kg, ig), 24 h after the toxic treatment, 10 ug/kg, iv of HGF was administrated. Animals were sacrificed 24 h after HGF treatment. Liver function test, and routing H&E staining were performed. Main molecular markers of damage and protection were addressed by Western blotting and RTPCR. **Results.** ALT, AST and ALP were increased by ANIT treatment, and HGF reduced these parameters. Histology showed tissue damage, particularly necrosis and inflammatory infiltration. HGF improved these findings. Molecular studies revealed the increment of Abcc3, Abcc2 and Cyp7a1 by HGF in comparison with ANIT alone treatment, this effect was associated by the activation of NRF2. **Conclusions.** HGF induced a protective effect decreasing necrosis and inflammation, and improving the main liver function markers, this effect was associated to an increment in the expression of phase 3 detoxification proteins. HGF could be considered as adjuvant in the treatment of cholestasis.

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## IV. VIRAL HEPATITIS

### 01
### ANALYSIS OF DIFFERENTIAL PROTEOMIC PROFILES EXPRESSION WITH GALLIC ACID IN HUH7 CELLS INFECTED WITH HEPATITIS C VIRUS

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**Introduction and aim.** Currently, the hepatitis C virus (HCV) proteome and its interrelation with the proteome of HCV-infected cells have been studied to the search for new antiviral antioxidants agents. Therefore, we evaluated the gallic acid (GA) effect, a phenol present in plants and fruits with anti-HCV capacity, on the proteome of cells that expressing viral proteins (Huh7-HCV). **Material and methods.** Huh7-HCV cells were exposed to 200 $\mu$M GA for 0-72 h. After each time, total proteins were extracted and 50 mg were resolved in two-dimensional electrophoresis gels to separate by isoelectric point (pI) and molecular weight (MW) in SDS-PAGE 12%. Gels were analyzed by PD-QUEST-v8.0.1 software. Protein differential expression was analyzed and were elucidated according to pI-PM using TagIdent software to identify proteins associated with HCV. Experiments were performed in triplicate and analyzed by Tukey. **Results.** Differential proteomic profiles were found in Huh7-HCV treated and untreated with GA at different times. Profiles denoting a basal expression of proteins that showed differential profile (35%), such as cellular stress response and antiviral activity proteins (Hsp72 and HSP7C) were identified. Also, at 24h with GA, an overexpression (30%) of proteins involved in liver regeneration, angiogenic and anti-apoptotic (GAS6, SOM2, RASF7, URP2) was observed. After 48 h of treatment, apoptotic, anti-angiogenic and mitochondrial proteins expression increased (40%) (CRLS1, AIFM1, NDUAA). Finally, at 72 h of GA exposure, we identified an overexpression (60%) of proteins related to cell protection, cell cycle and DNA repair (KAD2, ALKB8, GRB2, TNF14); that are necessary for cell survival after DNA damage, acting as a viral repressor. **Conclusions.** Our study identified changes in Huh7-HCV proteome in GA presence, generating information about the mechanisms of viral pathogenesis. GA decreases HCV replication and induces proteins expression in exposed cells, involved in stress response, viral activity, apoptosis, angiogenesis and tumor suppression. These results will allow identify proteins associated with HCV that could be molecular targets to treatment.

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## 02
## S-ADENOSYLMETHIONINE (SAM) DECREASES HEPATITIS C VIRUS (HCV) REPLICATION BY MODULATING UBIQUITINATION AND PROTEASOME ACTIVITY

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**Background and aim.** SAM decreases HCV viral expression by unknown mechanisms. SAM can regulate proteasomal activity in hepatocellular carcinoma cells. Our aim was to elucidate the mechanism(s) by which SAM decreases HCV expression, using the Huh7 hepatoma cell line expressing HCV non-structural proteins. **Material and methods.** Huh7 HCV-replicon cells were incubated with SAM 1mM, MG132 1 $\mu$M and mixed treatment for up to 72h. Cellular protein extracts were subjected to immunoblot analysis to detect NS5A and total ubiquitinated protein levels. Proteasome chymotrypsin-like activity was measured in HCV replicon cells upon 12-72 h of SAM exposition by using a commercial fluorogenic susbtrate for proteasome 20S Chymotrypsin like activity (Suc-Leu-Leu-Val-Tyr-AMC) measuring fluorescence every 30 min at 380 nm excitation/460 nm emission. Huh7 HCV replicon cells were exposed either with actinomycin D (4 $\mu$g/mL) or cycloheximide (50 $\mu$g/mL) and 2 h later 1 mM SAM was added. Cells were incubated at different time points (0-36 h) and then harvested to perform HCV-RNA and NS5A protein levels quantification. In addition, intracellular SAM concentration was measured by HPLC (24-72 h). **Results.** SAM treatment decrease NS5A protein level (65%) compared to untreated control at the same time (24-72 h). Intracellular SAM levels were higher than control cells upon 24-72 h post treatment. Chemical inhibition of total proteasome activity by MG132 reduced NS5A level (50%) and this effect was increased by SAM combined-treatment upon 24 h, since we observed that viral protein decreases even more than single treatment (83%). Ubiquitination profiles in cells treated with SAM were lower expressed than untreated cells at the same times (50-40%, 48-72 h respectively). Interestingly, SAM reduced total accumulated amount of ubiquitinated proteins from cells exposed to MG132. We found that SAM decreased the proteasome chymotrypsin-like activity (10-30%, $p < 0.05$) in treated cells (24-72 h), compared with untreated cells. In addition, we found that SAM-treated cells showed lower NS5A levels compared with the cells treated with cycloheximide at 24 h, and this effect was partially reverted when SAM-treated cells were exposed to cycloheximide (60% SAM, 80% CHX + SAM). **Conclusions.** Our findings suggest that S-adenosylmethionine indirectly reduces HCV expression by modulating ubiquitination profiles and disturbing the chymotrypsin proteasome activity required to HCV replication.
This work was partially financed by CONACyT-BASICA No. I0017-155082. Authors do not have any relevant commercial relationships to disclose.

## 03
## NEGATIVE REGULATION OF HEPATITIS C VIRUS BY HEPATOCYTE GROWTH FACTOR IN HUH-7 CELLS

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**Background.** Reactive oxygen species (ROS) plays an important role in hepatitis C virus (HCV) down-regulation. Recently, it has been reported that hepatocyte growth factor (HGF) reduces the viral load in chronic hepatitis C patients; however, the molecular mechanism(s) involved are yet unknown. **Material and methods.** Transient transfection assays were performed in Huh-7 cells to overexpress the HCV proteins with $pFK_{1389}$-NS3-3', pNS5A and pE2 plasmids and then cells were treated with 50 ng/mL of HGF for 24-48 h. Total RNA was extracted to quantify mRNA expression of superoxidase dismutase 1 and 2 (SOD1 and SOD2); methionine adenosyltransferase 1 and 2 (MAT1 and MAT2); catalase (CAT), thioredoxin (TRX), 18S ribosomal RNA and HCV-RNA by real-time PCR assay. Simultaneously, ROS levels were assessed by DHCF-DA assay at 24h. Western blot assay were performed to evaluate the protein expression levels of actin, CAT, SOD1, SOD2, MAT1A and MAT2A in cells treated with HGF for 48 h. **Results.** Our results indicate that gene expression of SOD1, SOD2, MAT2A, CAT and TRX was up-regulated by HGF compared with controls without treatment (16-fold, 5-fold, 4-fold, 4-fold and 1 fold-times, respectively). However, mRNA level of MAT1A were undetectable because this gene is silenced in hepatocellular carcinoma. ROS levels were diminished in $pFK_{1389}$-NS3-3', pE2 and pNS5A transfected cells treated with HGF upon 24 h in comparison to untreated cells (14%, 10% and 40%, respectively). In $pFK_{1389}$-NS3-3' transfected cells we could not find a differential modulation of antioxidant enzymes compared with the controls at 48 h. Interestingly, we found that HGF down-regulated NPTII protein, which is under HCV IRES control. Also, we found a down-regulation of MAT2A (30%) and up-regulation of MAT1A (27%) at 48 h upon HGF exposition compared with untreated cells. **Conclusions.** HGF induced mRNA levels of SOD1, SOD2, MAT2A, CAT and TRX and at the same time decreased ROS levels in cells transfected with HCV proteins. Also, HGF inhibits HCV expression levels and oxidative stress by unknown mechanisms that could involve in part a modulation of antioxidant enzymes systems and modulation of MAT1A/MAT2A enzymes relationship.
This work was partially financed by CONACyT-BASICA No. I0017-155082. The authors declare that there is no conflict of interest.

## 04
## QUANTIFICATION OF CONNECTIVE TISSUE GROWTH FACTOR DURING RAT LIVER FIBROSIS REVERSION

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**Background and aims.** Connective Tissue Growth Factor (CTGF/CCN2) induces hepatic progenitor cells to differentiate into hepatocytes or cholangiocytes in the chronic liver damage. During the liver regeneration in rat, expression of this protein is decreased compared with the fibrotic liver, reaching levels of a healthy liver; however the expression of this peptide in the liver and serum is unknown during fibrosis reversion. Our aim was to quantify the CTGF/CCN2 protein in liver and serum during liver fibrosis reversion in an experimental model. **Material and methods.** 12 Wistar male 3 month old rats weighing 250 ± 20g were administered i.p. with 20 doses of $CCl_4$ (250 $\mu$L, 33% v/v olive oil) to induce severe fibrosis (F3), according to METAVIR score. After completing the scheme, 6 of these subjects received one month of recovery (F3 + R). A control group (F0) were included. The livers of the 3 groups were collected and the degree of fibrosis was established by histology (Sirius Red) according to METAVIR score. CTGF/CCN2 was quantified in liver tissue and serum by ELISA. The results were shown as Mean ± SD, and were analyzed using one-way ANOVA and Tukey *post-hoc* test. $p < 0.05$ was considered significant. **Results.** Peptide levels CTGF/ CCN2 in the liver in the process of reversion of fibrosis were increased significantly compared to the group receiving the same number of administrations, reestablishing at equivalent levels to control (F0 = 2,913 ± 242; F3 = 1,629 ± 388; F3 + R = 2,807 ± 566 pg/mL n = 6), however no differences were observed between the groups at the serum level (F0 = 1,743 ± 271; F3 = 1,533 ± 487; F3 + R = 1,619 ± 255 pg/mL n = 6). **Conclusions.** During the reversal of fibrosis, expression of the peptide CTGF/CCN2 is increased in the liver, which may be associated with regression of fibrosis and differentiation of progenitor cells to try to counteract the damage caused by $CCl_4$, without changes in the protein secretion. Further studies to understand the mechanism of action of CTGF/CCN2 during reversion of liver fibrosis are needed.

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## 05
## CHRONIC HEPATITIS C TREATMENT WITH DIRECT ANTIVIRAL AGENTS IN A REAL LIFE SETTING

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**Background and aim.** New therapies with oral direct antiviral agents (DAA) have a high rate of sustained viral response (SVR) in clinical trials in patients with hepatitis C virus (HCV) infection. We aim to analyze the data of efficacy and safety of DAA Interferon free therapy in HCV infection in a study carried out in 5 different clinical settings in Mexico City in a real world scenario. **Material and methods.** Eighty-one patients were treated with 7 different DAA regimens, where end of treatment (EOT), SVR12 and adverse effects were evaluated. The attending physicians at discretion selected treatment regimens and its duration. **Results.** A total of 70.4% were female, 74.1% had blood transfusion as risk factor with a mean age of 60.7 years. The most common genotype was 1b with 70.4%. The fibrosis score was F3-F4 in 55.5%. Liver cirrhosis was present in 44%. Overall EOT was 98.8% and SVR12 was 94.5% independently of the regimen. Three patients did not achieve SVR, they were cirrhotic, treatment experienced patients, and two had hepatocarcinoma. Minor adverse effects were documented in 35.8% of the sample. **Conclusions.** The real life data shows that in Latin-America we face treating an older population, with advanced fibrosis, where a SVR12 of 94.5% to DAA is achieved.

The study provides data that may be useful to guide health professionals and health authorities in the construction of health policies. No disclosures.

**(IV.05) Table 1.**

| | End of treatment n = 81 | | SVR 12 n = 55 | |
|---|---|---|---|---|
| | 98.8% (80/81) | | 94.5% (52/55) | |
| Genotype | | | | |
| 1a | 93.8% | (15/16) | 81.8% | (9/11) |
| 1b | 100% | (57/57) | 100% | (37/37) |
| 2 | 100% | (7/7) | 83.3% | (5/6) |
| 3 | 100% | (1/1) | 100% | (1/1) |
| Fibrosis score | | | | |
| F0 | 100% | (11/11) | 100% | (10/10) |
| F1 | 100% | (17/17) | 100% | (11/11) |
| F2 | 100% | (8/8) | 100% | (4/4) |
| F3 | 100% | (9/9) | 100% | (3/3) |
| F4 | 97.2% | (35/36) | 88.8% | (24/27) |
| Previous treatment response | EOT 97.5% (40/41) | | SVR 12 90% (27/30) | |
| Non-responder | 94.4% | (17/18) | 92.9% | (13/14) |
| Relapser | 100% | (18/18) | 83.3% | (10/12) |
| Partial responder | 100% | (1/1) | 100% | (1/1) |
| INF intolerant | 100% | (4/4) | 100% | (3/3) |

## 06
## EXPERIENCE A YEAR OF TREATMENT IN PATIENTS WITH CHRONIC INFECTION FOR HEPATITIS C VIRUS IN HOSPITAL GENERAL DE MÉXICO

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**Background and aim.** Treatment of chronic infection of hepatitis C virus (HCV) with interferon-pegylated + ribavirin is recommended in guidelines from 2009, however, access to this treatment is still very limited in our country; although schemes already exist in the world safer and more effective therapeutic. The aim of this was to describe the characteristics of our patients one year after starting treatment at this center. **Material and methods.** Cross-sectional, observational and descriptive study. Records of patients with chronic HCV infection were analyzed. Patients with decompensated liver cirrhosis who presented contraindication to treatment were excluded. **Results.** 25 cases were analyzed in the last year of patients with HCV treatment.

The characteristics of our patients were: men 14 (56%), mean age 44 ± 9.1 years. Genotypes: 1a (48%), 1b (16%), 1 undetermined (16%), genotype 2 (16%), genotype 4 (4%). Regarding the degree of fibrosis: 1 (4%) F1, 2 (8%) F3 and 6 (24%) F4; including 8 Child-Pugh A (80%) and 2 Child-Pugh B (20%), according to MELD, 7 patients with mortality 1.9% to 3 months and 3 patients with mortality of 6% to 3 months. 56% of patients had comorbidities: 4 (28%) HIV, 3 (21%) diabetes. Currently 12 (48%) treatment, 4 (16%) undetectable at end of treatment, 6 (24%) not early virological response, 2 (8%) suspended in week 24 and only 1 (4%) discontinued due to adverse effects. Eleven (44%) had adverse effects the most frequent thrombocytopenia 4 (36%), 4 (36%) and asthenia weakness, anemia 2 (18%) and 1 (9%) lability. **Conclusions.** One year after starting treatment for virus infection in our hospital hepatitis C most are male, with an average age of 44 years, the most frequent genotype 1b. 40% with some degree of fibrosis and 28% HIV. The most common adverse event thrombocytopenia. After one year, 4 concluded treatment 12 treatment and 9 suspended awaiting new molecules.

## 07
## HIGH EFFICACY (SVR) IN REAL LIFE OF DDA INTERFERON FREE ANTIVIRAL REGIMEN IN MEXICAN PATIENTS WITH CHRONIC HEPATITIS C

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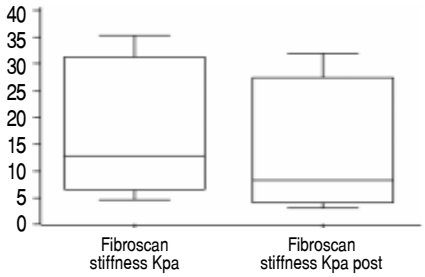
**Introduction.** In patients with infection caused by hepatitis C virus (HCV), treatment schemes with interferon free direct antivirals (IFDA) have demonstrated to have a superior sustained viral response (SVR), adherence to treatment, adverse effects, and regression of the liver disease. **Objective.** Describe the SVR in patients treated with IFDA suffering from HCV. **Material and methods.** A prospective cohort study of patients treated with IFDA suffering from HCV were evaluated; all patients had clinical, para-clinics and image study follow up to document their viral load, SVR, adherence to treatment, fibrosis and adverse effects (AEs). SPSS software version 22 was used to determine median and interquartile to describe continuous variables and percent of categorical variables with confidence interval. **Results.** Information of 35 patients was collected, with a median age of 60 years, 54% women. 43% had genotype IA, 46% IB and 11% genotype 2; the median baseline viral load was 860,056 UI. 60% of the patients had cirrhosis (66% Child A, 44% Child B), 18% presented moderated fibrosis, 11% HCV without fibrosis and 11% liver transplanted. 46.6% had previous treatment (88% ribavirin + interferon, 22% triple therapy with boceprevir). 93% had SVR (IC 95% 79%-99%), 77% presented with some AEs and 7% suspended treatment due to AEs. **Conclusions.** SVR in our population is the same as the one reported on international literature, with few AEs and good adherence to treatment.




***(IV.08) Figure 1.*** *Transient elastography pre- and post-treatment with IFDA.*

## 08
## IS THERE LIVER FIBROSIS REGRESSION AFTER INTERFERON FREE ANTIVIRAL REGIMEN TREATMENT FOR HEPATITIS C VIRUS? RESULTS TRANSIENT ELASTOGRAPHY PRE AND POST-TREATMENT

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**Introduction.** There are new strategies to avoid progression of the disease in patients with infection for hepatitis C (HCV). The treatment scheme with interferon-free antiviral regimen (IFAR) have been proven to be superior in comparison to conventional treatments. A noninvasive way to evaluate said progression is the transient elastography (TE). **Objetive.** Describe the TE pre and post treatment with IFAR in patients with infections for hepatitis C (HCV). **Material and methods.** Through a series of cases with patients treated with IFAR with HCV; patients were evaluated with clinic monitoring, paraclinic and TE; evolution of fibrosis was identified following the treatment. Medians and an interquartile range were used for the description of the continuous variables, percentages for the categorical; the result of kpa in the Fibroscan was compared with the nonparametric Wilcoxon test. **Results.** Five patients with basal TE treated with IFAR and HCV were evaluated, a median age of 53 years IQR 17, 40% women; 60% with Child-Pugh A and 40% B, median MELD 9 points, IQR 9. The median evolution of the disease was of 26 months with a IQR of 36.40% with genotype 1A, 40% Ib and 20% with 2b. Basal Fribroscan with a median kpa of 12.8 IQR 26.6 *vs.* Control Fibroscan with a median of 8.4 IQR 25.2 (value of p = 0.43). **Conclusions.** The use of IFAR in our patients with HCV demonstrated a regression of the fibrosis process; so it is suggested that the ET should be done in the pre and post treatment IVHC to evaluate the regression of fibrosis.

### 09
### HEPATITIS E VIRUS IN PATIENTS WITH HCV OR HBV. CROSS-SECTIONAL STUDY

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**Introduction.** Hepatitis E virus (HEV) has become an increasingly acknowledged cause of viral hepatitis. HEV is endemic in resource-limited countries and an emerging health issue in industrialized countries. Also it has been reported the coexistence of infection hepatitis E virus (HEV) in patients infected with the hepatitis B (HBV) or hepatitis C (HCV) virus. **Aim.** To investigate the association of HEV infection among patients infected with HBV and HCV compared with other groups, including pregnant women and blood donors. **Material and methods.** Serum samples from four groups of subjects: 88 subjects initially evaluated as blood donors, with reactivity to HBV surface antigen (n = 9) or antibodies against HCV (n = 88), confirmed by NAT; 94 patients with clinical symptoms suggestive of HEV infection intentionally serological evaluation. 127 high obstetric risk pregnant women, and 110 blood donors accepted, all of them from the urban area of Mexico City, with medium-high socioeconomic level and negative infectious serology. We determined serological IgG antibodies against HEV recombinant antigens, Genotypes 1 and 3 by ELISA method (Euroimmun Medizinische Labordiagnostika AG Luebeck, Germany), with cutoffs values: negative < 1.6 IU / mL, iffy > 1.61 to <2.2 IU/mL and positive > 2.2 IU/ mL. **Results.** The prevalence of reactivity for IgG antibodies against hepatitis E virus in carriers of HCV and HBV was 1.1%. In patients with suggestive symptoms they were reactive in seven cases (7.4%). Only one pregnant woman (0.9%), none case in blood donors group. **Conclusions.** Accordingly to our results. There is a low the association IgG antibodies HEV genotypes 1 and 3 in subjects with HCV or HBV infection, as in blood donors and women with high-risk pregnancies. The frequency is higher in patients with intent clinical study of HEV infection.

## V. PEDIATRIC HEPATOLOGY

### 01
### CLINICAL FEATURES IN CHILDREN WITH AUTOINMUNE HEPATITIS

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**Background.** Autoimmune hepatitis (AIH) is a progressive inflammatory liver disease, has a broad clinical spectrum and response to immunosuppressive therapy prevents progression to cirrhosis. **Objective.** Determine the presentation of autoimmune hepatitis in our population. **Material and methods.** We conducted a retrospective cohort study of patients with autoimmune hepatitis in last 10 years and determinate the clinical, biochemical and histopatologic features. **Results.** Were included 32 patients, 75% female. The development of hepatitis in over 3 months was in 19/32 (60%) patients, whereas that liver failure it was the clinical form in 9/32 (28%) patients and acute hepatitis in 4/32 (12.5%). Type 1 AIH was more frequently. In chronic hepatitis 19 (60%) the evolution was insidious with non-specific characteristics cirrhosis at diagnosis in 11/32 (34%) patients. Co-morbilitiy were detected in 16 cases, of this 44% was autoimmune. All received immunosuppressive management and 25% abandoned treatment. 37% was achieved suspend the immunosuppressant or maintain minimum dose of steroid. 6% of patients die. **Conclusions.** In this study more than a half of cases were silent presentation and a third of this patient have advanced liver fibrosis to diagnosis. A high degree of suspicion is required for an early diagnosis and timely treatment that significantly improves the prognosis.

The authors declares that there is no conflict of interest.

### 02
### EXPERIENCE OF MOLECULAR ADSORBENT RECIRCULATING SYSTEM IN FULMINANT HEPATIC FAILURE IN CHILDRENS

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**Background and aim.** The fulminant hepatic failure (FHF) is a very severe condition in the pediatric patients, since it is a multisystemic condition that it deals with a severe damage of the hepatic function associated with hepatic necrosis and reflected

**(V. 01) Table 1.** Clinical features in 32 children with AIH.

| Coming out | N | Age (years) | Type 1 | Type 2 | Cirrhosis | Other diseases | Treatment defection |
|---|---|---|---|---|---|---|---|
| Acute hepatitis | 4 (12%) | 10.8 | 4 (12%) | - | - | 3 (9%) | 2 (6%) |
| Chronic hepatitis | 19 (60%) | 7.4 | 16 (50%) | 3 (9%) | 7 (22%) | 10 (31%) | 4 (12%) |
| Liver failure | 9 (28%) | 7.5 | 8 (25%) | 1 (3%) | 4 (12%) | 3 (9%) | 2 (6%) |

in the failure in the function of synthesis of the liver in a patient without an hepatic previous disease. The shortage of cadaveric donors has forced to the use of new treatments of replacement of the hepatic function, such as s the system of adsorbent molecular recirculation (MARS). The aim is to present the experience case of a patient of child with FHF in whom the therapy of dialysis was used successfully by albumin MARS. **Material and methods.** Retrospective review of the clinical process and results of laboratory of the patients treated with MARS for a period of 4 years. **Results.** A total of 7 patients, clinical and biochemical baseline and after MARS therapy assessment showed improvement of consciousness in 5 of 7 patients and biochemical values were decreased total bilirubin (p 0.025), prothrombin time (p 0.044) and serum ammonia (p 0.014). **Conclusions.** The system MARS can be useful in the patients with FHF on having diminished of significant form the levels of ammonium, prothrombin time and bilirrubin. Still remain more investigation like controlled studies and finding the ideal moment for therapy of hepatic substitution.

## VI. ALCOHOLIC LIVER DISEASE - FATTY LIVER

### 01
### EVALUATION OF CYTOKINES LEVELS IN SUBJECTS WITH DIFFERENT PATTERN OF ALCOHOL CONSUMPTION

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**Background.** The different mechanism involved in the pathophysiology of alcoholic liver disease (ALD) alterations in cellular mediators they are modified during the development of ALD. **Aim.** Evaluate levels of cytokines in subjects with different pattern of alcohol consumption. **Material and methods.** The cross-sectional study included four groups: Group 1 control subjects; group 2 subjects with Hazardous alcohol consumption (AUDIT > 8); group 3 subjects without clinical or biochemical stigmata of liver damage; group 4 patients with cirrhosis by alcohol. Serum cytokine levels were determined by Luminex technology. For statistical analysis was performed *U*-Mann Whitney and we considered significant differences ($p < 0.05$). **Results.** Included 311 subjects, the mean age was: 38 ± 10, 31 ± 11, 28 ± 12 y 47 ± 7 years, respectively ($p < 0.001$). **Conclusion.** The results show different cytokine levels being higher in the group with cirrhosis, therefore we considered that inflammation is a permanent process in alcohol consumption and is more evident in alcoholic liver disease.

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### 02
### TLR-4 EXPRESSION IN MONOCYTES PERIPHERAL BLOOD OF ALCOHOLICS AND ALCOHOLIC CIRRHOTIC PATIENTS

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**Introduction.** Toll-like receptor 4 is known for the recognition of lipopolysaccharide (LPS), a component of Gram-negative bacteria walls. Intestinal permeability is increased by chronic alcohol ingestion causing traslocation of LPS into the portal and systemic blood, which reaches the liver by activation of TLR-4 signaling pathway which results in an increase of pro-inflammatory cytokines. **Objective.** To evaluate the expression of TLR4 in peripheral blood monocytes of subjects with alcoholism and cirrhotic patients. **Material and methods.** Alcoholics patients from Clinic Liver, Hospital General de México with criteria of alcoholism were included according to WHO (> 70 g/day in men,> 50 g/day in women in the last 5 years). They were classified according to the presence (CiOH) or absence

**(VI. 01) Table 1.** Demographic parameters and cytokines levels in subjects with different pattern of alcohol consumption.

| | Control | Hazardous | Dependence | Cirrhosis | P |
|---|---|---|---|---|---|
| Gender n (%) | | | | | |
| F | 34 (22) | 2 (7) | 21 (32) | 4 (7) | $0.05^{b,d,e}$ |
| M | 119 (78) | 28 (93)$^{b}$ | 45 (68)$^{e}$ | 58 (93)$^{d}$ | |
| BMI (kg/m$^2$) | 28 ± 3.7$^{a}$ | 27 ± 4.6 | 25 ± 5$^{c}$ | 27.3 ± 7 | $< 0.001^{a,c}$ |
| AUDIT | 2 ± 2$^{a}$ | 17.7 ± 22.5$^{b}$ | 25 ± 25$^{c}$ | 26 ± 7.5$^{d}$ | $< 0.001^{a,b,c,d}$ |
| Consumption occasion (g) | 51 ± 64$^{a}$ | 146 ± 125$^{b}$ | 180 ± 190$^{c}$ | 354 ± 256$^{d,f}$ | $< 0.001^{a,b,c,d,f}$ |
| ALT (U/L) | 27.4 ± 18.2$^{a}$ | 29.2 ± 13.8 | 33.5 ± 25.6 | 38 ± 26.3$^{d}$ | $0.05^{a,d}$ |
| GGT (U/L) | 33 ± 28$^{a}$ | 35.5 ± 37 | 51.7 ± 75.2 | 141 ± 143.5$^{d,f}$ | $< 0.001^{a,d,e,f}$ |
| GM-CSF (pg/mL) | 0.9 ± 1.8 | 3.1 ± 15.2$^{b}$ | 1.9 ± 4.8$^{c,e}$ | 7.5 ± 44$^{d,f}$ | $< 0.001^{b,c,d,e,f}$ |
| IL-2 (pg/mL) | 0.8 ± 2.4 | 0.1 ± 0.1$^{b}$ | 1.2 ± 5.2$^{c,e}$ | 24.3 ± 105$^{d,f}$ | $< 0.001^{b,c,d,e,f}$ |
| IL-6 (pg/mL) | 0.8 ± 3 | 0.3 ± 0.3$^{b}$ | 1.9 ± 2.1$^{c,e}$ | 75 ± 417.5$^{d,f}$ | $< 0.001^{b,c,d,e,f}$ |
| IL-8 (pg/mL) | 1.8 ± 2.6 | 6.2 ± 18 | 15.3 ± 27.5$^{c,e}$ | 35.5 ± 82$^{d,f}$ | $< 0.001^{c,d,e,f}$ |
| TNF-$\alpha$ (pg/mL) | 0.7 ± 0.9 | 0.3 ± 0.3$^{b}$ | 1 ± 1.3$^{c,e}$ | 9.6 ± 45.6$^{d,f}$ | $< 0.001^{b,c,d,e,f}$ |
| IL-10 (pg/mL) | 5 ± 31$^{b}$ | 0.2 ± 0.4$^{b}$ | 5 ± 16.3$^{c,e}$ | 10 ± 31.5$^{d,f}$ | $< 0.001^{b,c,d,e,f}$ |

Data are expressed in media ± DS. U/L: unite per liter. pg/mL: picograms per milliliter. NS: not significant. [a] Differences between all groups. [b] Differences between Hazardous and control. [c] Differences between dependence and controles. [d] Differences between cirrhosis and controles. [e] Differences between dependence and Hazardous. [f] Differences between cirrhosis and Hazardous.

(OH) of liver damage from alcohol. Detailed medical history of each patient was realized. The control group (CT) consisted of subjects who did not consume alcohol or consumed < 10 g/day. Blood samples on one occasion (10 mL) were collected to obtain mononuclear cells by density gradient. These cells were labeling and analyzed by flow cytometry. For statistical analysis, ANOVA was performed using ortogonal analysis. **Results.** CT were 9 (AUDIT < 3) and mean age of 26 ± 6 years, and 1.8 gOH/day. The CiOH (4) and OH were 8. The mean age was 38 ± 15 and 48 ± 8 years, respectively, (AUDIT > 17 for both groups). Average grams of alcohol per day for liver a damage was 345 ± 11 g on patients without damage was 100 ± 34 g. The years of consumption were 28 years in both groups. Results of monocytes for CT: 10%, OH: 13%, CiOH: 16%. CD14 was 81% for all groups. While for TLR4 was CT: 0.9%, OH: 65%, CiOH: 96% $p < 0.001$ between controls and patients. **Conclusions.** TLR4 expression was significantly higher in alcoholics with and without liver damage, in peripheral blood monocytes. This receptor not only is activated in liver and also in peripheral blood therefore TLR 4 may be contributed to systemic inflammation.

## 03
## PROGNOSTIC MODELS IN PATIENTS WITH ALCOHOLIC HEPATITIS

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**Introduction.** There are several prognostic models to predict mortality in patients with alcoholic hepatitis (AH): The modified discriminant function Maddrey, the Glasgow's scale, ABIC score, MELD and MELD-Na. There are no studies comparing them all together. **Objective.** To determine which is the best model to predict mortality (first 30 days) in patients with HA. **Material and methods.** Data were collected from patients with HA over the past 5 years and prognostic models were calculated: Maddrey's modified discriminant function, Glasgow's scale, ABIC, MELD and MELD-Na, and 30-day survival was revised. Statistical analysis was performed using ROC curves. **Results.** A total of 76 patients; 72 (94.7%) were males; 58 (76.3%) had cirrhosis by ultrasound; 39 (51.3%) were treated with prednisone, and 37 (48.7%) with pentoxifylline; the overall 30-day mortality was 46 (60.5%) patients. In the COR curve analysis, the MELD, followed by MELD-Na had the best specificity and sensitivity according with the area under the curve (Figure 1). **Conclusion.** MELD and MELD-Na are the best prognostic models to predict mortality in patients with HA.

## 04
## MAIN CAUSES OF HOSPITAL RE-ENTRY FOR ALCOHOL LIVER PATIENTS IN JALISCO

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**Background and aim.** Alcohol consumption in Mexico is a public health problem. We need to have national statistics on the reason for readmission in patients who present with this condition to work on prevention. The primary objective is to show the main causes of hospital readmission in patients with alcoholic liver disease, such as secondary objectives to demonstrate the frequency of age, sex, severity with which these patients are admitted, the average time of reentry. **Material and methods.** Observational retrospective epidemiological study from January 2012 to January 2015, including patients of any age and sex who were admitted to the Department of Gastroenterology of Hospital Civil de Guadalajara with previous diagnosis of liver disease by alcohol, defined as intake of 20 g of alcohol per day in women and 30 g per day in men, over one year. Epidemiological data was taken from the clinical record, carried and emptied statistical data using an electronic program and database. Performing frequency measurements of age, gender, severity by Child Pugh classification, re-entry time, causes of readmission. **Results.** 1,130 patients with acute/chronic liver disease diagnosis, of which 28.3% (n = 320) were secondary to alcoholic etiology and of these 28.7% (n = 92) had hospital readmission. The main cause of rehospitalization was upper gastrointestinal bleeding 29% (n = 27), followed by hepatic encephalopathy 26% (n = 24), ascites 21% (n = 19), infections 12% (n = 11), other (low gastrointestinal bleeding, acute pancreatitis, acute kidney failure) 12% (n = 11), the infection that was most documented during hospitalization was Urinary Infection in 54% (n = 21), most readmission rate was presented before the month in 52% (n = 48), the Child Pugh score C was the most occurred in the first income as in reentry. **Conclusions.** The upper gastrointestinal hemorrhage and hepatic encephalopathy were the main causes of hospital readmission, which occurred within the first month. We must take preventive measures to reduce such readmissions.
The study was conducted without conflict of interest.

## 05
## HISTOLOGIC CHANGES IN THE LIVER ASSOCIATED TO OBESOGENIC DIET AND CHRONIC ALCOHOL INTAKE IN MICE

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**Introduction.** Liver cirrhosis is one a most frequent causes of death in Mexico. Chronic alcohol intake is among the main etiologies for liver disease and is highly associated to cirrhosis mortality. At the same time Mexico is the first place worldwide in prevalence of obesity. Although both causes of liver disease coincide epidemiologically, no characterization of their interaction is available. We aimed to describe the interactions of a high fat diet (HFD) and alcohol intake at the histopathologic level in the liver. **Aim.** To identify histopathological changes in the liver associated with a HFD concomitantly with a chronic alcohol intake in mice. **Material and methods.** Six groups of C57BL/

6, 8 week-old, male mice were obtained: control (C), ethanol (EtOH), high fat diet (HFD), ethanol + HFD (EtOH + HFD), these groups received 4 months of treatment. (HFD&EtOH): 1° HFD followed by 2° etanol and (EtOH&HFD): 1° ethanol followed by 2° HDF: these two groups received the first treatment for 4 months followed by the second treatment for another 4 months. **Results.** Histopathologic changes were observed in the liver depending on the treatment received. EtOH group showed slight architectural changes compared to C but did not show steatosis. HFD had microvesicular-focal steatosis located in hepatocytes by the portal area (TP). EtOH + HFD exhibited a worsen impairment in architecture compared with HFD showing microvesicular-focal steatosis in hepatocytes located by the TP. In contrast HFD & EtOH showed microvesicular-focal steatosis in hepatocytes by the central vein (VC), whereas EtOH&HFD had macrovesicular-difuse steatosis in hepatocytes at both locations. No signs of fibrosis were observed. **Conclusion.** Changes in liver architecture depend on the insults received as well as the interaction between them; specific patters of liver damage according to both the insult and the hepatocyte location among the liver acinus were shown without fibrosis. In mice the worst damage was caused by the chronic alcohol intake followed by a HFD.
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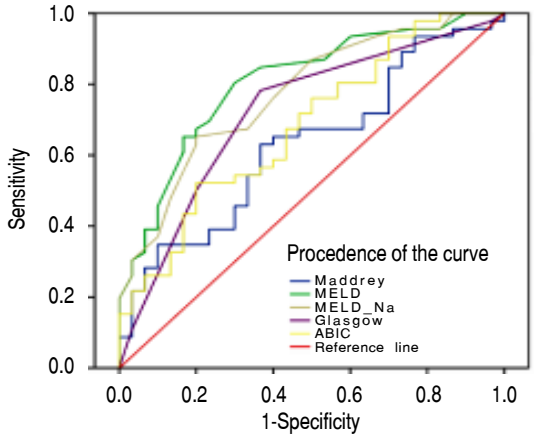


| SCORE | Area under the curve | 95% CI | P |
|---|---|---|---|
| Maddrey | 0.630 | 0.503 - 0.756 | 0.05 |
| MELD | 0.806 | 0.707 - 0.906 | <0.0001 |
| MELD-Na | 0.774 | 0.669 - 0.879 | <0.0001 |
| Glasgow | 0.721 | 0.601 - 0.840 | 0.001 |
| ABIC | 0.68 | 0.561 - | 0.007 |

***(VI.03) Figure 1.*** *Areas under the curve comparisons between different prognostic models of mortality in alcoholic hepatitis.*

## 06
## HEPATIC STEATOSIS PRODUCED BY DOUBLE INSULT (DIET AND ALCOHOL): EXPERIMENTAL MODEL

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**Background.** The grade and severity of the hepatic failure (steatosis, fibrosis and cirrhosis) caused by diet high fat or chronic alcohol consumption or both in humans is few known, so it is necessary reproduce this condition in experimental model. **Objective.** Evaluate the hepatic steatosis and determine if only one or both insult (high fat diet and alcohol consumption) reproduce this pathological condition. **Material and methods.** We use 30 mice bread C57/BL6, 20 g of weight and 8 weeks of age. The animals were separated in 5 groups (G1 to G6) as mentioned below: G1: sham, G2: ethanol at 20% (OH 20%), G3 high fat (HF), G4: both treatments in the same time (OH20% + HF), G5: first treatment OH20% (4 months) + 2nd. treatment HF (6 months), and G6: 1st treatment HF (4 months) + 2nd treatment OH 20% (6 months). Weight gain, drink and food were measured weekly. At 6 months the animals were anesthesied to obtained blood sample and laparotomy for evaluated the abdominal organs (e.g. liver, stomach, gut, kidneys, perirenal and subcutaneous adipose). **Results.** No different was observed in all groups respect to the water or OH consumption. The liver injury was more evident in G5 compared to others groups. The gain weight in G3 to G6 it was greater with respect to G1 (sham). **Conclusions.** The alcohol consumption induced susceptibility to liver injury and then HF diet maintenance this process.
The authors declare that there is no conflict of interest. This research was finance by UNAM-PAPIT TA200515 y IA 203113.

## 07
## UTILITY OF NON-INVASIVE METHODS TO DIAGNOSE ADVANCED FIBROSIS IN NON-ALCOHOLIC FATTY LIVER DISEASE. A RANDOMIZED CLINICAL CONTROLLED TRIAL OF 1,213 PATIENTS

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**Background.** Nonalcoholic fatty liver disease (NAFLD) is observed in 30% of Mexicans. Guidelines suggest perform non-invasive markers of liver fibrosis in all subjects with NAFLD. However, this information is based in moderate quality information from non-prospective studies, and not validated in Latin population. **Aim.** to assess the utility of non-invasive methods for detection of advanced liver fibrosis in patients with NAFLD. Secondary objectives are to determine the proportion

of patients that went to a specialist after receiving the diagnosis, and to describe which non-invasive method is related to an increased seek of medical attention or treatment. **Material and methods.** Patients from a regular check-up from June 2013 to June 2015 were prospectively enrolled, and followed during one year after diagnosis of NAFLD (NCT01874249). Inclusion criteria comprised subjects with BMI ≥ 27 kg/m$^2$, liver steatosis by sonography, and exclusion of significant alcohol consumption. Patients were randomly allocated in one of five groups: receive personal counseling about NAFLD (A), interactive information about the risk of NAFLD (B), information about liver fibrosis status using NAFLD score (C); information about liver fibrosis using NAFLD score and FibroScan (D); information about liver fibrosis using FibroScan (E). Patients were contacted six months and one year later to obtain information about specialized medical care, or therapeutic strategies for NAFLD. **Results.** 1,213 patients were included (82% male), mean age 47 ± 9 years, and BMI 30 ± 4 kg/m$^2$. Advanced fibrosis was diagnosed in 0% (AB); 12% (C); 10.7% (D); 11.5% (E) ($P < 0.05$). After receiving diagnosis for NAFLD or liver fibrosis status, the group with the higher proportion of patients seeking specialized medical care or receive treatment was group D (44%), followed by group C, B, E and A (38%, 37%, 35%, 21% respectively) ($P < 0.05$). **Conclusion.** An important number of overweight/obese asymptomatic subjects are not properly detected. The lack of systematic assessment of liver fibrosis has deleterious impact. Increase counseling or perform non-invasive markers for fibrosis enhanced the proportion of subjects seeking management for NAFLD. However, many patients will not seek medical attention or receive any kind of treatment; therefore, it is important to design a method to routinely diagnose and treat patients even on the first visit to the physician.

## 08
## PREVALENCE OF NONALCOHOLIC FATTY LIVER DISEASE AND INSULIN RESISTANCE IN PEDIATRIC PATIENTS WITH OVERWEIGHT AND OBESITY

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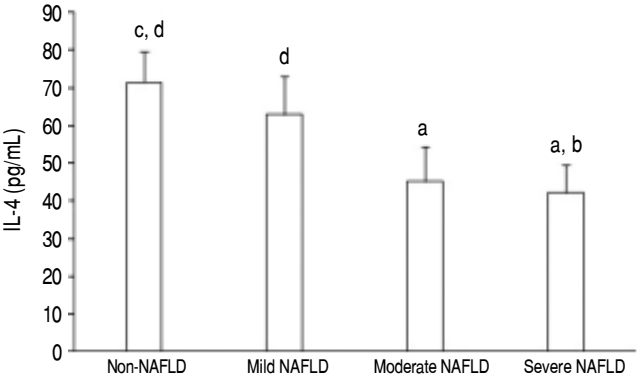
**Background.** Obesity has become one of the major health problems in pediatric population, and it is associated with Non-alcoholic Fatty Liver Disease (NAFLD); however, the prevalence is highly variable and the biochemical characteristics associated. **Objective.** To determine the prevalence of NAFLD and biochemical alterations in pediatric patients with overweight and obesity. **Material and methods.** A cross-sectional study was designed. Patients were 8-18 years old with body mass index (BMI) above the 85th percentile, without liver or metabolic disease. Patients included were conducted anthropometric and laboratory measurements. Liver Ultrasound (LU) diagnosed NAFLD. **Results.** From March 2014 to December 2015, 56 patients have included in the study. The mean age was 11.2 ± 2.9 years, predominantly female patients (62.5%). Obesity was diagnosed in 51 patients (91.1%) and overweight in 5 patients (8.9%). The biochemical values were: glucose 94 ± 14.3 mg/dL, insulin 23.2 ± 13.6 $\mu$U/l, glycated hemoglobin 5.2 ± 0.42%, cholesterol 159 ± 27.9 mg/dL, triglycerides 149 ± 70.2 mg/dL, HDL 37.6 ± 7.2 mg/dL, AST 28.2 ± 10.2 U/l, ALT 32.4 ± 23.9 U/l, GGT 17.7 ± 8.4 U/l. HOMA index in 45 patients were ≥ 3 (median 5.46, IQR 4.21-8.89), and Functional Beta Cells index values were 343.9% (median 285.6, IQR 210.39-439.33) for this patients. Finally, only 36 patients were realized the LU. NAFLD was confirmed in 4 overweight patients and 27 with Obesity. **Conclusions.** Pediatric patients with overweight and obesity have high prevalence of NAFLD (91.2%) and insulin resistance (75.51%), which indicates vulnerability of this group for illness like diabetes mellitus and coronary heart disease at an early age, and the need to implement new diagnostic tools and more effective treatments.

This work was supported in part by UNAM-PAPIIT: IA203113 TA 200515, PROMEP-SEP: CA302.




***(VI.09) Figure 1.*** *Serum IL-4 significantly decreases as the steatosis degree increases. Severity of NAFLD was defined by abdominal ultrasound imaging using a convex multi-frequency transducer in gray scale. Data are presented as mean ± standard deviation. Differences were considered significant when P < 0.05, as followed: [a] Significant difference* vs. *Non-NAFLD. [b] Significant difference* vs. *mild-NAFLD. [c] Significant difference* vs. *moderate-NAFLD. [d] Significant difference* vs. *severe-NAFLD.*

## 09
## SYSTEMIC LEVELS OF IL-4 DECREASE ACCORDING TO THE SEVERITY OF NON-ALCOHOLIC FATTY LIVER DISEASE IN OBESE PATIENTS

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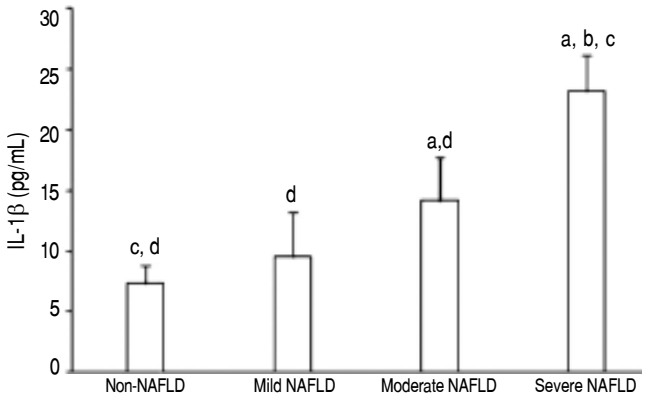
**Introduction.** Proinflammatory cytokines have been shown to increase in obese individuals with non-alcoholic fatty liver disease (NAFLD). However, it is still unclear whether the systemic concentrations of anti-inflammatory mediators are also affected in these patients. Goals. To examine serum levels of the anti-inflammatory cytokine interleukin 4 (IL-4) in 101 obese women and men (BMI > 30 kg/m$^2$) with different grades of NAFLD. **Materials and methods.** Obese subjects were subjected to abdominal ultrasound imaging using a convex multi-frequency




***(VI.10) Figure 1.*** *Circulating levels of IL-1β appear to increase in accordance to the degree of steatosis. Severity of NAFLD was defined by abdominal ultrasound imaging using a convex multi-frequency transducer in gray scale. Data are presented as mean ± standard deviation. Differences were considered significant when P < 0.05, as followed: [a] Significant difference* vs. *Non-NAFLD. [b] Significant difference* vs. *mild-NAFLD. [c] Significant difference* vs. *moderate-NAFLD. [d] Significant difference* vs. *severe-NAFLD.*

transducer in gray scale for establishing the severity of NAFLD. Blood samples were obtained after overnight fasting for further estimation of total cholesterol and triglycerides, tumor necrosis factor alpha (TNF-α), insulin, glucose, and the level of insulin resistance by HOMA-IR. Serum levels of IL-4 were also determined examining its association with the severity of NAFLD. **Results.** Serum levels of IL-4 were significantly lower in NAFLD obese subjects than in obese individuals without NAFLD (48.13 ± 14.09 pg/mL *vs.* 71.46 ± 8.25 pg/mL, respectively). Besides being inversely correlated with serum TNF-α, reduced values of IL-4 were significantly related to hyperinsulinemia (r = -0.682). Interestingly, IL-4 progressively decreased as the severity of NAFLD increased (Figure 1). **Conclusions.** Systemic levels of IL-4 are clearly reduced in obese patients with severe NAFLD as compared with obese subjects without NAFLD, while also showed a significant correlation with a state of hyperinsulinemia independently of obesity. The clinical utility of serum IL-4 to identify obese patients at higher risk of developing NAFLD remains to be evaluated.
This work was supported by grant no. 129316-M from CONACyT to GE.

## 10
## SEVERITY OF NON-ALCOHOLIC FATTY LIVER DISEASE ASSOCIATES WITH HIGH SERUM LEVELS OF INTERLEUKIN 1 BETA IN OBESE PATIENTS

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**Background.** Obesity has been shown to increase the risk to develop hepatic steatosis, also referred to as Non-Alcoholic Fatty Liver Disease (NAFLD). Experimental data in mice fed a high fat diet suggest that the severity of NAFLD may associate with increased serum levels of proinflammatory mediators, however, there are not yet solid evidence in patients with obesity. **Goals.** To evaluate the serum levels of the proinflammatory marker interleukin (IL) 1β in 107 obese women and men (body mass index > 30 kg/m$^2$) exhibiting different grades of NAFLD. **Material and methods.** Blood glucose, glycated hemoglobin, insulin, the homeostatic model assessment of insulin resistance (HOMA-IR), total cholesterol, triglycerides, high and low-density lipoproteins, parameters of liver function, and IL-1β were measured in each subject. The stage of NAFLD was estimated by abdominal ultrasound imaging. **Results.** In comparison with obese subjects without steatosis, obese patients with NAFLD showed increased HOMA-IR (6.53 ± 1.87), total cholesterol (224.35 ± 12.74 mg/dL), alanine aminotransferase (47.08 ± 6.46 UI/L), gamma-glutamyl transpeptidase (42.56 ± 4.07 UI/l), and IL-1β (11.03 ± 1.84 pg/mL). Notably, serum values of IL-1β progressively increased in accordance with the severity of NAFLD (Figure 1), which supports a role for systemic inflammatory mediators in promoting steatosis progression regardless of obesity. **Conclusions.** Further clinical prospective studies need to be addressed to elucidate the role of IL-1β in the development of NAFLD while also establishing their clinical utility in the assessment of obese patients at higher risk to develop liver steatosis.
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## 11
## RELATIONSHIP BETWEEN TIME OF DIAGNOSIS AND PRESENCE OF LIVER DAMAGE IN DIABETES MELLITUS 2 PATIENTS FROM DIABETIMSS CLINIC, HGZMF NO. 1

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**Background.** Liver damage secondary to Non Alcoholic Fatty Liver Disease (NAFLD) is considered of great importance because of its close relationship with insulin resistance, diabetes mellitus (DM) and obesity, and it has direct complications, such as steatohepatitis nonalcoholic (NASH), cirrhosis or hepatocellular carcinoma. **Aim.** Determine the relationship between time of the diagnosis of DM 2, and the presence of liver damage in patients from DiabetIMSS clinic, HGZMF No. 1 IMSS Pachuca, Hidalgo. **Material and methods.** Descriptive, prospective, cross-sectional study which included patients 18 years old and more, who came to the DiabetIMSS clinic. The sample for this study was randomly selected, excluding those who had previous risk factors for hepatitis C, alcoholic liver disease, and other liver diseases. The total sample obtained was 40 patients, 34 females and 6 males, and Liver Function Test (LFT) and liver ultrasound were obtained. Liver damage evidence was analyzed in correlation with the time of diagnosis of diabetes mellitus with the Chi Square test. **Results.** The age range studied was 26 to 79 years, it was concluded that 72% of the population, have been recently diagnosed with Diabetes Mellitus (0 to 5 years), 50% of the population were obese, 38% had overweight, and only 12% presented normal weight. As for indicators of liver damage in women, AST was elevated in 82.35%, while in men it was raised in 50%, and considering degree of steatosis reported

by ultrasound, 95% had sonographic evidence of fatty liver, from which, 65.7% had data of grade I steatosis, 23.6% of grade II, and just 10.5% with grade III. **Conclusions.** Since in our study a large number of patients showed high sonographic degrees of steatosis, or important elevation of ALT levels, even after a short time of being diagnosed as diabetics; it would be important to implement LFT and Liver Ultrasound as screening tools in this population, from the moment DM2 is diagnosed.
The authors declare that there isn't conflict of interest.

## 12
## CORRELATION BETWEEN THE DYSGLYCEMIC STATE AND THE RISK OF SIGNIFICANT LIVER FIBROSIS

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**Introduction and aim.** Non-alcoholic fatty liver disease (NAFLD) is the hepatic manifestation of the metabolic syndrome, it affects almost 70% of type 2 diabetics. Almost 40% of NAFLD patients have steatohepatitis, of them 15% develop fibrosis/cirrhosis. Our aim was to verify if the risk of significant liver fibrosis correlates with the dysglycemic states. **Material and methods.** Transversal study. We collected data from obese patients (grades I, II, and III according with WHO criteria), they were stratified as normoglycemic, prediabetics and type 2 diabetics. NAFLD score was calculated (Angulo P, et al. The NAFLD fibrosis score: a noninvasive system that identifies liver fibrosis in patients with NAFLD. *Hepatology* 2007; 45(4): 846-54). To estimate the risk of liver fibrosis (< -1.455 without significant fibrosis; -1.455 to 0.676 indeterminate; > 0.676 significant fibrosis). The Spearman's rank correlation coefficient was employed to evaluate the concordance between ordinal variables, $P < 0.05$ was considered significant. **Results.** Were included 98 patients, 83 female (84.7%), the average of age was 40.2 ± 9.9 year-old. Grade I obesity 7 (7.1%), grade II 27 (27.6%), grade III 64 (65.3%). Diabetics 16 (16.3%), prediabetics 33 (33.7%) and normoglycemics 49 (50%). According with NAFLD score: Without fibrosis 28 (28.6%), indeterminate 49 (50%), significant fibrosis 21 (21.4%). The obesity grade had a week positive correlation with the risk of significant fibrosis ($r = 0.21$, $P = 0.04$). The dysglycemic state had a strong positive correlation with the risk of significant fibrosis ($r = 0.50$, $P < 0.0001$). **Conclusions.** Obesity and diabetes are associated with the risk of significant liver fibrosis according with NAFLD score. Type 2 diabetes is the predictive factor with the strongest association strength to develop significant liver fibrosis.

## 13
## SEVERITY OF NON-ALCOHOLIC FATTY LIVER DISEASE AND METABOLIC RISK PHENOTYPE IN OBESE PATIENTS

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**Background and aims.** Obese patients with metabolic syndrome (MS) have a greater risk to developing non-alcoholic fatty liver disease (NAFLD); however, the influence of the metabolic phenotype over the degree of NAFLD progression is not clear. The aim of the present study is to evaluate histological progression of NAFLD associated to the metabolic phenotype in obese patients. **Material and methods.** Design. Cross-sectional and observational study. Obese patients (n = 13) treated at the Bariatric Surgery Department at CMN 20 de Noviembre, ISSSTE; candidates for bariatric surgery, without consumption of alcohol or other hepatotoxic agent. Patients were classified as metabolically healthy obese (MHO) if < 3 MS criteria; and metabolically unhealthy obese (MUO) with at least 3 MS criteria. At the time of surgery, liver biopsies were obtained, and further evaluated by two different pathologists experienced in liver damage, blinded to clinical patient's information (acceptable intraclass correlation coefficient was verified). We considered advanced NAFLD damage with any of the following criteria: steatosis larger than 66% in the presence of severe ballooning degeneration; or severe necro-inflammatory changes; or fibrosis score II or greater. Statistical analysis through chi-square test. **Results.** 13 patients were included, and classified as MHO (n = 9; 3 men y 6 women, median age 44.8 years old) and MUO (n = 4; 2 men y 2 women, median age 40 years old); without significant differences concerning the anthropometric parameters body mass index and abdominal circumference. A greater degree of steatosis was observed in patients with MUO phenotype *vs.* MHO (55.0 *vs.* 37.1%, respectively; $p < 0.05$). Interestingly, all patients with MUO phenotype (100%) showed at least one criterion of advanced NAFLD damage, showing fibrosis score II-IV. MHO group showed advanced NAFLD damage in two cases (28.6%); one of them with fibrosis score III. In general, differences were statistically significant ($p < 0.05$). **Conclusions.** Results suggest that metabolic phenotype is significantly associated with severity of NAFLD, as determined by liver biopsy, in obese population.
The authors declare that there is no conflict of interests.

## 14
## ASSOCIATION OF HEMOGLOBIN SERUM LEVELS IN NON ALCOHOLIC FATTY LIVER DISEASE

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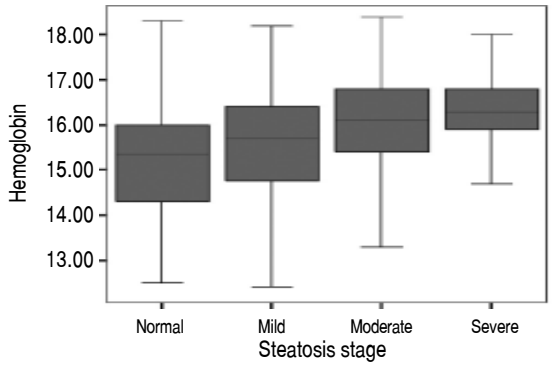
**Introduction.** Hemoglobin expression is regulated by oxidative stress; its increase has been related to the inhibition of HepG2 cells oxidation and the degree of steatosis in murine models. Ac-




*(VI.14) Figure 1.*

tually the association of hemoglobin high levels in patients with nonalcoholic fatty liver disease is currently unknown. The aim of this study was to determine the association of hemoglobin serum levels with the degree of steatosis and fibrosis in patients with nonalcoholic fatty liver. **Material and methods.** A cross-sectional study nested in a randomized clinical trial (NCT01874249), which evaluated 1,203 patients with nonalcoholic fatty liver disease determined by ultrasound was performed. The degree of steatosis was classified as mild, moderate and severe. Serum hemoglobin concentrations were determined. In 441 patients transient elastography was performed to assess the degree of fibrosis. To determine the association between serum hemoglobin levels and the degree of steatosis an analysis of one-way ANOVA adjusted for smoking and body mass index was performed. **Results.** 82% (n = 983) of the sample were male with an average age of 48 ± 9 years and a body mass index of 30.6 ± 3.6 kg/m$^2$. Smoking prevalence was 26.7% (n = 321). According to ultrasound 36.6% (n = 440) of patients had mild steatosis; 33.1% (n = 398) moderate and 6.2% (n = 74) severe. Of the patients evaluated with transient elastography 5.1% (n = 63) had some degree of fibrosis (> 7 kPa). The average concentration of hemoglobin was 15.7 ± 1.2 mg/dL. In comparing averages, increased hemoglobin levels were significantly associated with the degree of steatosis, having mean concentrations of 15.6 ± 1.2 mg/dl for mild steatosis, 16.1 ± 0.9 mg/dL for moderate and 16.02 ± 1.2 mg/dl were for severe ($p < 0.001$) (Figure 1). When comparing the levels of hemoglobin in the presence of fibrosis, no significant associations were found. **Conclusions.** In patients with nonalcoholic fatty liver disease high levels of hemoglobin are related to the degree of hepatic steatosis determined by ultrasound. However they were not associated with the presence of fibrosis.

## 15
## CORRELATION BETWEEN BODY MASS INDEX AND LIVER DAMAGE IN CHILDREN POPULATION WITH OBESITY AT THE HGZMF NO. 1 IMSS HIDALGO

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**Background.** Nonalcoholic fatty liver disease (NAFLD) may be a consequence of obesity and diabetes, and comprises a spectrum from simple steatosis, to nonalcoholic steatohepatitis (NASH). NAFLD usually develops in obese children, showing abnormalities in liver enzymes; likewise, a correlation between the severity of hepatic steatosis by ultrasound and the degree of elevation of ALT has been described. **Aim.** Recognize the correlation that exist between body mass index (BMI) and liver damage in obese children population of the Hospital General de Zona y Medicina Familiar (HGZMF) No. 1 Hidalgo. **Material and methods.** Analytic, transversal and prospective Study, in which we included all the obese children attending for consultation at their Family Medicine office. Then we obtained liver ultrasound and liver function test (LFT), and BMI was calculated by percentiles of age and gender. **Results.** We studied a population of 36 children between 3 and 12 years old; 17 were male (47.22%) and 19 female (52.78%), all with a BMI > 30 kg/m$^2$ and above the 95th percentile, with the following findings: elevated ALT levels in 63.89% and AST in 2.78%, being more frequent in males (33.33% and 2.78%, respectively); regarding liver US, 25% of male and 25% of female patients presented grade I steatosis, and only 2.78% grade II (a female patient), and the Pearson correlation index between BMI and elevation of ALT was 0.30 for men and 0.31 for women. **Conclusions.** Our study determined that there is a direct correlation between BMI and liver damage, since 25% of the total sample presented steatosis at US, and 63.89% showed elevated ALT. It is necessary to take preventive measures to avoid obesity in infants, because these patients are at increased risk of type 2 DM, cardiovascular disease, cirrhosis and neoplasia in the fore coming years.
The authors declare that there isn't conflict of interest.

## 16
## PEDIATRIC VISCERAL ADIPOSITY INDEX ADAPTATION CORRELATES WITH HOMA-IR, MATSUDA AND TRANSAMINASES

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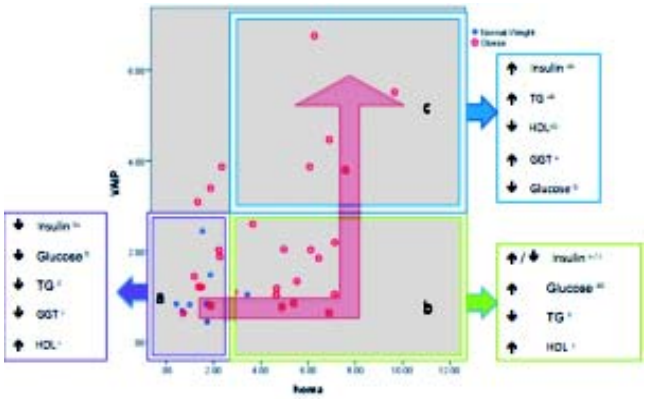
**Introduction.** Visceral adiposity index (VAI) is a mathematical model associated with metabolic and cardiovascular diseases in adults. Previous study on pediatric population failed to demonstrate any association of VAI with metabolic risk. In parallel, we adapted VAI components to pediatric population (VAI$^P$), but its association with metabolic or cardiovascular risk, has not been yet evaluated. NAFLD represents the liver expression of metabolic syndrome and transaminases are usually elevated in this condition. Little is known in childhood obesity and less its association with VAI$^P$. **Aim.** Adjust the new index by age range and analyze the correlation of VAI$^P$ with insulin resistance (HOMA-IR and Matsuda) and hepatic enzymes. **Material and methods.** In order to adjust the VAI$^P$, a cross-sectional study was performed. Data from 396 children (211♂, 185♀; 5-17 years) with BMI, waist, TG and HDL, were used and a quadratic regression model was done. Then, a correlation analysis against HOMA-IR and Matsuda from 41 other children (age 7-




*(VI.16) Figure 1. Grouping by HOMA-IR vs. VAIP.*

11 years) was carried out, 30 of them with obesity, *acanthosis nigricans* and Tanner stage < 2. Pearson correlation and ANOVA were done. SPSS v.22 was used. $p < 0.01$. **Results.** $VAI^P$ was adjusted considering children between < 10 and ≥ 10 years of age, in order to avoid the bias of puberty metabolic changes. A significant moderate correlation was found between $VAI^P$ and HOMA-IR ($r = 0.452$, $p = 0.003$), Matsuda ($r = -0.366$, $p = 0.019$), ALT ($r = 0.410$, $p=0.008$), and GGT ($r = 0.397$, $p = 0.010$). Children with higher $VAI^P$ and abnormal HOMA-IR (Figure 1c), had higher levels of hepatic enzymes than healthy children (Figure 1a). A paradoxical third group with higher HOMA-IR and normal $VAI^P$ had higher glucose than the other groups, suggesting an intermediate step. **Conclusions.** The adjusted $VAI^P$ correlates with HOMA-IR, Matsuda and hepatic enzymes. It could be helpful for identifying children at risk for cardiometabolic diseases. Since glucose is higher in paradoxical group, this variable could be included to improve the prognosis tool. CONACyT SALUD-2012-01-181786.

## 17
## IMPROVEMENT OF THE METABOLIC PROFILE AND LIVER FUNCTION TESTS IN OBESE PATIENTS AFTER BARIATRIC SURGERY

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**Introduction and aims.** Obesity is a worldwide health care problem, it is related to non-alcoholic steatohepatitis (NASH). In countries with high prevalence of obesity, NASH is the main cause of abnormal liver function tests (increase of transaminases). The aim of this study was to know the metabolic and liver function profile of obese patients and to evaluate if this profile improves after bariatric surgery. **Material and methods.** An observational, longitudinal, prospective, and analytic study. We collected data from obese patients before surgery and 3-month after surgery. Patients lost during follow-up were excluded. To compare between groups t Student for related samples was performed, a $P \leq 0.05$ was considered significant. **Results.** The cohort included 98 obese patients, 83 female (84.7%). The average of age was 40.2 ± 1.0 year-old. Diabetics 16 (16.3%), prediabetics 33 (33.7%), normoglycemic 49 (50%). Two diabetics (12.5%) received metformin and 14 (87.5%) metformin + other. Twenty four prediabetics (72.7%) received metformin. The analysis to compare before and after bariatric surgery in the different subgroups is shown in tables 1-3. **Conclusions.** The weight loss by bariatric surgery improves the metabolic and liver function profile, it is noteworthy the improvement in ALT and platelets, as possible indirect markers related to hepatic/systemic inflammation.

**(VI.17) Table 1.** Comparison between biochemical and metabolic characteristics of obese patients with diabetes before and 3-monthafter bariatric surgery.

| Variable | Before surgery (n = 16) | After surgery (n = 16) | *P* |
|---|---|---|---|
| **Body Mass Index** | **46.6±2.2** | **41.6±1.7** | **< 0.0001** |
| **ALT (IU/L)** | **34.9±6.3** | **20.6±2.3** | **0.04** |
| AST (IU/L) | 29.4±3.7 | 24.3±1.9 | 0.25 |
| **Triglycerides (mg/dL)** | **181.9±23.3** | **162.6±23.9** | **0.02** |
| **Cholesterol (mg/dL)** | **170.5±9.4** | **150.8±8.7** | **0.004** |
| HDL-Cholesterol (mg/dL) | 41.4±2.2 | 40.1±2.3 | 0.59 |
| **Fasting glucose (mg/dL)** | **147.4±7.7** | **101.8±6.6** | **< 0.0001** |
| **HbA1c (%)** | **6.6±0.3** | **5.7±0.3** | **0.005** |
| Albumin (mg/dL) | 3.9±0.07 | 3.9±0.10 | 0.53 |
| Platelets ($10^9$/mcl) | 255.6±12.0 | 236.5±11.7 | 0.10 |

**(VI.17) Table 2.** Comparison between biochemical and metabolic characteristics of obese patients with prediabetes before and 3-monthafter bariatric surgery.

| Variable | Before surgery (n = 33) | After surgery (n = 33) | *P* |
|---|---|---|---|
| **Body Mass Index** | **43.5±1.3** | **39.5±1.1** | **< 0.0001** |
| ALT (IU/L) | 28.9±2.4 | 28.5±2.1 | 0.84 |
| AST (IU/L) | 23.0±1.3 | 25.6±1.5 | 1.00 |
| **Triglycerides (mg/dL)** | **167.5±12.7** | **135.7±6.4** | **0.02** |
| **Cholesterol (mg/dL)** | **176.5±6.1** | **156.9±6.6** | **0.002** |
| HDL-Cholesterol (mg/dL) | 37.4±1.4 | 37.7±1.1 | 0.74 |
| **Fasting glucose (mg/dL)** | **103.1±1.9** | **91.4±1.7** | **< 0.0001** |
| **HbA1c (%)** | **5.7±0.07** | **5.2±0.12** | **< 0.0001** |
| Albumin (mg/dL) | 4.0±0.05 | 4.1±0.05 | 0.34 |
| **Platelets ($10^9$/mcl)** | **271.7±8.4** | **255.1±8.6** | **0.02** |

**(VI.17) Table 3.** Comparison between biochemical and metabolic characteristics of normoglycemic obese patients before and 3-monthafter bariatric surgery.

| Variable | Before surgery (n = 49) | After surgery (n = 49) | *P* |
|---|---|---|---|
| **Body Mass Index** | **42.2±1.0** | **38.5±0.9** | **< 0.0001** |
| **ALT (IU/L)** | **31.4±2.2** | **25.9±1.5** | **0.004** |
| AST (IU/L) | 26.3±1.6 | 24.9±1.2 | 0.38 |
| **Triglycerides (mg/dL)** | **147.1±9.9** | **125.2±7.7** | **0.001** |
| **Cholesterol (mg/dL)** | **165.8±4.5** | **150.2±4.9** | **< 0.0001** |
| HDL-Cholesterol (mg/dL) | 39.8±1.3 | 39.4±1.1 | 0.67 |
| **Fasting glucose (mg/dL)** | **90.9±0.9** | **85.6±1.0** | **< 0.0001** |
| **HbA1c (%)** | **5.2±0.1** | **4.8±0.1** | **0.001** |
| Albumin (mg/dL) | 3.9±0.04 | 4.0±0.04 | 0.18 |
| **Platelets ($10^9$/mcl)** | **274.6±10.9** | **259.3±8.7** | **0.05** |

## VII. OTHER TOPICS

### 01
### ANALYSIS OF THE SCATTERING IN THE DEGREE OF LIVER FIBROSIS IN A $CCl_4$ INDUCED MURINE MODEL

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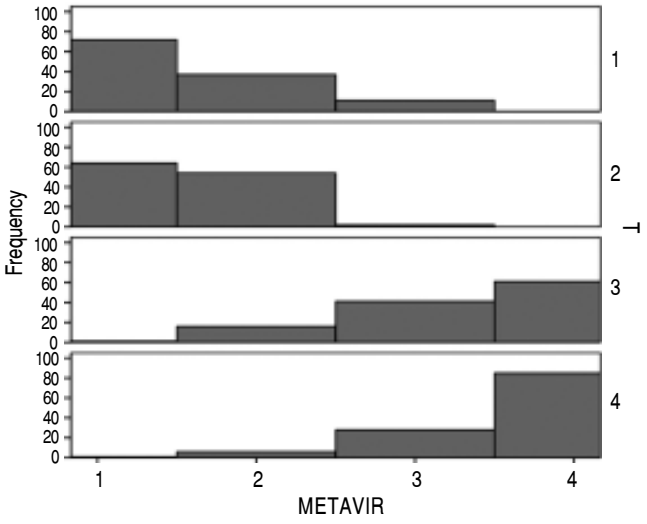
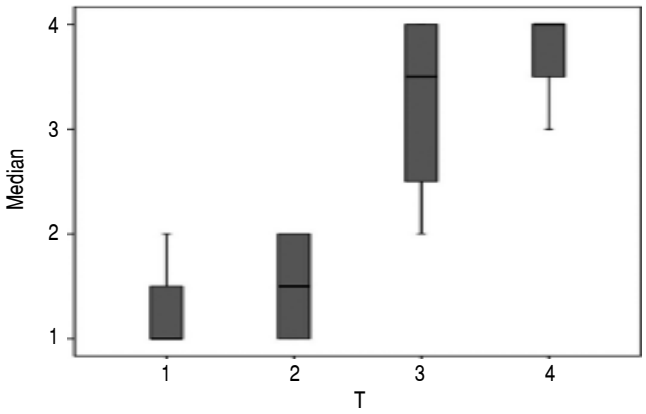
**Introduction.** The new tools for diagnosis of liver fibrosis must be compared to biopsy, the diagnostic standard, which has shortcomings related to scattering of fibrosis within the organ itself and between individuals. This leads to diagnostic uncertainty, which furthermore impacts the accuracy in the calibration of non-invasive tools. **Objective.** To determine the scattering degree of fibrosis in a $CCl_4$ induced murine model. **Material and methods.** Four groups of 4 male Wistar rats were injected with 33% $CCl_4$ in olive oil at 1 $\mu$L/g, in doses adjusted to weekly weight gain. Sacrifices were made at 4 (T1), 6 (T2), 10 (T3) and 13 (T4) weeks. Livers were collected in formaline and stained with Masson Trichrome. 10 4x observations were made in 3 different zones of the liver and evaluated with METAVIR score. A $\chi^2$ test between F observed and F expected was performed ($p < 0.05$). **Results.** F observed was different from F expected ($p < 0.01$). The distribution range of each T's fibrosis overlaps with the adjacent time, in T1-T2 and T3-T4 (Figures 1-2). T3 has the highest scattering and the biggest distance to the expected value, T2. **Conclusions.** The induction times do not render a predominant stage of fibrosis. Scattering is preeminent in intermediate stages, in accordance with the substantial inaccuracy described for the new diagnostic techniques. This suggests that the problem in discerning intermediate stages could be due to poor calibration techniques related to fibrosis scattering.




*(VII.01) Figure 1.*




*(VII.01) Figure 2.*

### 02
### IT IS POSSIBLE TO APPLY BAVENO VI TO SUSPECTED COMPENSATED CIRRHOSIS ON MEXICAN POPULATION?

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**Introduction.** In April / 2015 VII Workshop was held Baveno. Updated definitions were given and transient elastography (TE) was introduced into clinical practice. Compensated advanced chronic liver disease (CACLD) was proposed to reflect that, the spectrum between advanced fibrosis and cirrhosis is continuous in asymptomatic patients. TE liver stiffness is sufficient to suspect CACLD in asymptomatic subjects with known etiology. A measure < 10 kilopascals (kPa) in absence of clinical signs, excludes CACLD, 10-15 kPa suggest that, but need further testing for confirmation and > 15 kPa are highly suggestive. Aim: To determine if the parameters of TE proposed in Baveno VI for suspected CACLD, apply to Mexican population. **Material and methods.** Patients examined at Gastroenterology Department from Jan-Dec / 2015. Inclusion criteria: Patients > 18 years old, Child-Pugh A, chronic liver disease secondary to hepatitis B or C virus (HBV-HCV), chronic cholestatic diseases, alcohol, nonalcoholic fatty liver disease (NAFLD), which have FibroScan study. Variables analyzed: gender, age, etiology, kPa, presence or absence of clinical signs, liver ultrasound (LU). Study type: Observational, descriptive, transversal, prolective. Statistical analysis: measures of central tendency, dispersion; association of qualitative variables with $\chi^2$, statistical significance $p < 0.05$. SPSS 20 Edition for final analysis. **Results.** Of 152 patients, 80 FibroScan were made. Average age 57.9 ± 13.4. Average kPa 19.8 ± 13.08. Female gender 68.75% *vs.* male gender 31.25%. Women media 18.8 kPa ± 8.11 and men 22 ± 15.5 kPa. 60% of patients with > 15 kPa, 27.5% < 10 kPa and 12.5% with 10 to 15 kPa. The highest prevalence was NAFLD

(32.5%), HCV (25%) and alcohol (16.2%). Clinical data in 57.5% of cases; 43/48 patients with > 15 kPa. LU with cirrhosis signs in 39 cases. Association of clinical signs and kPa > 15 with $p < 0.001$ and OR = 83.1, 95% CI 18.4, 375.1; ultrasound cirrhosis signs and > 15 kPa with $p < 0.0001$. **Conclusions.** Our results suggest that, Baveno VI consensus may be apply to Mexican population, dividing in patients with < 15 kPa and > 15 kPa, since the latter group presents statistical significance for clinical and ultrasound signs for CACLD.

## 03
## LIVER FUNCTION TESTS AND CHIKUNGUNYA VIRUS INFECTION IN PATIENTS FROM THE RECENT OUTBREAK IN MEXICO, 2015

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**Objective.** To investigate presence of liver damage in patients with Chikungunya fever from the recent outbreak in Mexico, 2015. **Material and methods.** We studied patients at the Clinical Hospital "Dr. Roberto Nettel Flores", in Tapachula, Chiapas, with acute febrile illness, suggestive of Chikungunya virus (CHIKV) infection. RT-qPCR or IgM by ELISA confirmed CHIKV infection. After patient's written informed consent, 5 mL of blood were withdrawn and clinical manifestations were recorded. We measured: alkaline phosphatase (ALP), alanine aminotransferase (ALT), aspartate aminotransferase (AST), γ-glutamyl transferase (GGT), total bilirubin, direct bilirubin, indirect bilirubin, cholesterol and total protein in serum samples. **Results.** We studied 40 patients CHIKV (+), 78% women, mean age 39 ± 17.7 years. Common symptoms were: myalgia, arthralgia, headache and chills in 98-85% of cases. There were no differences in the proportion of symptoms between the groups analyzed by RT-qPCR or IgM except lymphadenopathy, present mainly in IgM group ($p = 0.01$). In these patients infected with CHIKV, there was no statistical difference in liver function tests between the two groups. However, analyzed individually, AST levels were elevated in 17 patients (42.5%) and ALT in 13 patients (32.5%). GGT and ALP were elevated in 9 (22.5%) and 7 (17.5%) patients, respectively. Interestingly, a young patient had 5-fold increase in ALT and AST and 2 times in ALP and GGT, without clinical remarks. The average levels of ALT in patients with conjunctival hyperemia were statistically higher compared to patients without this sign ($p = 0.02$). Bilirubin tests were normal. Only three patients had subtly elevated cholesterol levels. Total proteins were measured mainly in the IgM group due to sera scarce, and the results were between the reference levels. **Conclusions.** We found no abnormal median values of the studied enzymes in these patients, and the other biochemical parameters, in contrast with the published data in other populations.

Further studies are required in order to define the role of liver function in this infection. This work has been totally subsidized by PROMEP/103.5/15/3344 project.

The authors report no conflicts of interest.

## 04
## COLONIC VARICES AS A COMPLICATION OF PRE-HEPATIC PORTAL HYPERTENSION DUE TO ACUTE PANCREATITIS AND PORTO-SPLENO THROMBOSIS

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**Introduction.** Pre-hepatic portal hypertension is a rare disease with prevalence ranging between 0.7 and 3.7 per 100,000 population. Ectopic colonic varices are even a rarer clinical manifestation, the cause is portal hypertension and the localization is usually in rectosigmoid junction and cecum with more frequency. The aim of this paper is to present the clinical case of a patient with low gastrointestinal bleeding, secondary to colonic varices as clinical manifestation of pre-hepatic portal hypertension. **Case report.** 47-year-old male with a history of type 2 diabetes of 10 years of evolution, acute pancreatitis 6 months prior to the current clinical picture. He presented haematochezia more than 6 events per day, with hemodynamic alteration manifested by fainting, he decreased hemoglobin levels to 3 g/dL and required transfusion with multiple red cell concentrates. Endoscopy reports gastric varices IGV2 satisfactorily treated with injection of cyanoacrylate, however, he persisted with hematoquezia so an angiography was performed so as an angiotomography that reported dolic splenic artery and splenomegaly. The colonoscopy reported colonic varices in splenic flexure with no data of recent bleeding, the endoscopy capsule corroborated colonical varices and excluded other causes of bleeding. The patient had no new bleeding event, and was discharged with conservative management. **Conclusions.** Ectopic varices as a complication of extrahepatic portal hypertension is a rare manifestation, have been documented in the literature less than 100 clinical cases of these, only 17 cases with varices of colonic location, the cases of colonic varices localized in left colon are outstanding. The treatment is not well established but it ranges from conservative management to partial or total colon resection. We found it important to present the case of the patient, because the colonic varices cause several bleeding and it only occurs in 1 to 5% of all episodes of variceal bleeding, causing massive bleeding with high mortality of up to 40%. Colonic varices should be considered in the differential diagnosis in patients presenting with gastrointestinal bleeding.

## 05
## ANTHROPOMETRIC, BIOCHEMICAL, CLINICAL AND DIETETIC INDICATORS RELATED TO THE RISK OF MALNUTRITION IN HOSPITALIZED PATIENTS WITH LIVER CIRRHOSIS. TWEAKING SCREENING TOOLS

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**Introduction.** Malnutrition in liver cirrhosis is a predictor of higher complications and poor surveillance. The prevalence of malnutrition in hospitalized patients with liver cirrhosis al-

though is high, could vary according to the screening tool used for detection; the variables included in each tool and the punctuation of the scale are different which may explain its diagnostic capacity and the over or underestimation of the malnutrition. The direct and objective measurements of anthropometric, biochemical, clinical and dietary indicators may help to distinguish the main variables to assess the risk of malnutrition in these patients. **Goal.** Obtain the objective indicators of nutritional status related to the risk of malnutrition in patients with liver cirrhosis. **Material and methods.** In a group of hospitalized patients with liver cirrhosis, anthropometric variables such as current weight, normal weight, BMI; biochemical variables such as albumin, creatinine, BUN, leukocytes, and lymphocytes; clinical variables such as degree of edema, changes in skin, degree of ascites; and dietary variables such as nutritional requirements and percentage of uptake, were evaluated. Descriptive and bivariate analysis were used to determinate the association with the risk of malnutrition. **Results.** Of 82 patients, 14.8% had VHC, 8.5% CHAN, 89% of the group studied had a change in Hb ($p = 0.029$), 58.5% had a decrease in body weight ($p = 0.008$), 28% had changes in BUN ($p = 0.012$), 39.0% changes in lymphocytes ($p = 0.005$), 64.6% changes in skin texture ($p = 0.000$), 37.8% had edema ($p = 0.002$), 51.2% had ascites ($p = 0.001$), and 8.5% consumed less than 50% their nutritional requirements ($p = 0.046$) all of them related to the risk of malnutrition. **Conclusion.** Regardless of the origin and progression of liver cirrhosis, nutritional status indicators that show an association with risk of malnutrition were any decrease in body weight, any change in BUN, lymphocytes, changes in skin texture, any degree of edema and or ascites, diarrhea and a consumption less than fifty percent of nutritional requirements. We suggest emphasize those indicators in any tool and to grant a higher value on scales in order to assess the risk of malnutrition and to treat them immediately.
The authors declare no conflict of interest.

## 06
## ANTHROPOMETRIC AND BIOCHEMICAL CHARACTERISTICS OF PATIENTS WITH LIVER CIRRHOSIS BY HEPATITIS C VIRUS (HCV) ACCORDING TO GENOTYPE. AN EXPLORATORY STUDY

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**Introduction.** Liver disease nutritional status determines evolution. In recent studies it has been observed that the genotype is determinative of the response to treatment in patients with HCV. It needs to be known if other features contribute to evolution, however, it has not been reported in the literature that nutritional status variables described are related to this situation. **Objective.** Describe main anthropometric, biochemical and clinical characteristics of patients classified by genotype of HCV. **Material and methods.** In a cohort of HCV patients there were measured at the beginning of their diagnosis, weight, body mass index (BMI), circumference of chest, waist (WC), hip, mid arm circumference (MAC), bicipital skinfold (BSF), tricipital (TSF), subscapular (SST), suprailiac (SISF), body fat percentage, liver function tests, glucose, lipid profile and blood count cytology. The degree of steatosis and fibrosis were evaluated with transient elastography. The corresponding genotypes were obtained. Comorbidities such as diabetes, hypertension and dysthyroidism were investigated. Descriptive of central tendency and dispersion statistics for each group were used and Kruskal-Wallis and $\chi^2$ for differences between groups using SPSS v20 software. **Results.** Data was obtained for 65 patients that were fully enrolled for a period of 12 months. 63% were women with low frequency of comorbidities. Comorbidities found were HIV (16.9%), diabetes (6.2%), hypertension (21.5%) and dysthyroidism (12.3%). 49.3% of the group studied showed some degree of steatosis, while 81.5% showed some degree of fibrosis. According to the known genotypes, they were divided into 3 groups: Genotype 1a ($n = 30$), Genotype 1b ($n = 28$) and Genotype 2b ($n = 7$). Differences were found in BMI ($p = 0.029$), Hip ($p = 0.044$), waist-hip ratio ($p = 0.025$), BSF ($p = 0.001$), SSF ($p = 0.039$), SISF ($p = 0.034$), body fat percentage ($p = 0.003$), ALT ($p = 0.002$), AST ($p = 0.019$) and ALP ($p = 0.039$). **Conclusions.** The study shows that individuals with genotype 1b are more likely to gain weight from the accumulation of body fat, which is a risk factor for the development of liver cirrhosis. It's important to continue with more studies to confirm these findings.

## 07
## DETECTION OF WINDOW PERIOD HEPATITIS C AND OCCULT HEPATITIS B INFECTIONS IN BLOOD DONORS FROM VERACRUZ

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**Background.** Mexico is a low prevalence region for hepatitis B and C, however hepatitis C is a major cause of cirrhosis and liver transplant candidates in the country. In Veracruz, liver diseases are the leading cause of death in men aged 35 to 44 years and the second in men aged 45 to 64. The reported prevalence for hepatitis B and C in blood donors from Veracruz was of 0.11% and 0.72% respectively, being Papaloapan the highest prevalence region for both infections in the state. **Aim.** To determine the occurrence of window period hepatitis C and occult hepatitis B infections (OBI) in blood donors in the Centro Estatal de Transfusión Sanguínea de Veracruz (CETS-Veracruz). **Material and methods.** A retrospective and cross-sectional study from blood donors attended in CETS-Veracruz in the period of 2010 to 2014 was carried out. Serological screening was performed using VITROS 3600 ECi / ECiQ Immunodiagnostic System (until 2013) and ARCHITECT Plus i2000 SR (2014) which included total anti-HBc. In the 2010-2012 period nucleic acid amplification tests (NAT) were intermittently applied to 7,596 samples using Roche COBAS Amplicor and in 2014 TIGRIS Procleix was used. **Results.** Three probable hepatitis C window period infections were found, but only one was

confirmed from frozen plasma, which has the risk factors identified previously, such as being fisherman and coming from the Papaloapan region (Alvarado). The prevalence for anti-HBc obtained in 2014 was 0.86%. Within the anti-HBc positive samples and negative for HBsAg, 19 were analyzed by NAT and one was positive (OBI case). **Conclusions.** There is controversy about the costs of NAT implementation in blood banks in Mexico since the results are very heterogeneous. Our results demonstrate the usefulness of NAT in Veracruz, because in the very few samples analyzed it was possible to identify an OBI case and a window period hepatitis C infection (two more putative). It is worth mentioning that each positive blood unit to hepatitis B and C can infect up to 4 recipients of blood components.

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## 08
## EPIDEMIOLOGY OF INFECTION BY HEPATITIS C VIRUS IN THE GASTROENTEROLOGY SERVICE, ISSSTE TLAXCALA

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**Background.** Hepatitis C virus infection occurs in 3% of the world's population, 85% develop chronic infection, cirrhosis in 20% and 4% of hepatocellular carcinoma. **Objectives.** To determine the clinical and epidemiological characteristics on reagents HCV patients sent to the Unit. **Material and methods.** A retrospective, descriptive, longitudinal study was conducted over a period of three years (January 2013 - January 2016) of patients referred to the Departmet of Gastroenterology as reagents to HCV; which they underwent confirmatory test and later with baseline CRP quantitative determination of genotype. Thirty-seven patients (prevalence of the 5th decade of life) was included, was confirmed by PCR test to 83.7% (31 patients). In the positive genotype it was determined. **Results.** Thirty-one patients in total, 9 males, (29.1%) and 22 women (70.9%). The genotypes found were: 1a – 38.7%, 32.2% 1b, 2b – 19.3%, and 9.6% indeterminate. The genotype distribution was: 1a 25.8% women, 12.9% men, 22.5% women 1b, 9.6% men. Genotype 2b - 12.9% women, ad 6.2% men. The transfusion was found 74.1% and was the main cause of infection. The second cause of infection was being worker health - 9.6% (nurses). As a third cause family history - 6.4% and finally tattoos and pearcing 3.2%. Unknown cause with the same 3.2%. During the study period they were found and corroborated 3 cases of hepatocellular carcinoma. Regarding Diabetes found which comorbidity in 19.3%, 6.4% hypothyroidism, rheumatoid arthritis and Parkinson disease in 3.2%. **Conclusions.** In this first statistical report we found similarities with those reported in México. Fifty years old average, transfusions as the primary cause of infection, general prevalence of geotype 1; differs predominance of females in all age groups, increased in a new risk factors such as occupation, family relationship and punctures.

## 09
## IDIOPATHIC NON CIRRHOTIC PORTAL HYPERTENSION. A CASE REPORT

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**Introduction.** Idiopathic non cirrhotic portal hypertension (INCPH) is a rare clinical disease with intrahepatic portal hypertension and cirrhosis in the absence of other causes of liver disease. Diagnosis requires the presence of unmistakable signs of portal hypertension. **Clinical case.** Male 49-year-old diabetic mother. Group O + RH. Denies consumption herbalist, no significant alcohol consumption, smoking denied. Transfusions positive 9 years ago. Chronic diseases and other pathologies denied. Syndactyly. Evolution of three months, with weakness, increased abdominal and jaundice, diffuse abdominal pain, no weight loss or gastrointestinal bleeding. On admission abdomen at the expense of moderate ascites, decreased bowel sounds, painlessly medium and deep tenderness, lower limb edema +++. Laboratory BH: Leucos: 4.6, Hb: 5.8 g/dL, Hct: 17.3%, VCM, Platelets 69 000, Neutrophils: 3.2, PT 18.8 sec, PTT 33, INR: 1.35 Glucose: 86, Creatinine: 0.89, Bilirubin total: 1.67 Direct bilirubin: 1.32, ALT 32, AST 48, ALP: 116, albumin 2.7 g/dL, Sodium: 137.3, Potassium: 3.8, 1.9 GASA, cytochemistry ascites fluid without EBP. HIV negative. Ags VHB: negative, Anti HCV: negative, C3 55, C4: 8 IgG: 2176, IgM: 212. ANAS 1/60, anti-mitochondrial antibodies, smooth muscle. antiKLM, AntiKLM1 negative. MELD 12 points Child Pugh B 9 points. Hepatosplenic ultrasound. Liver parenchyma, irregular, ascites, spleen 115 x 47 mm, porta vein: 11 mm, average speed 19 cm/sec, splenic vein 18 cm/sec. Endoscopy esophageal varices F3, antral erosive gastropathy. Liver tomography to assess liver axis porto mesentery with irregular edges, splenomegaly. Diuretic therapy was initiated for ascites control. The patient hadn't liver disease risk factors, liver biopsy: Liver tissue without architectural distortion, without cirrhosis. We are concluded that the patient had idiopathic non-cirrhotic portal hypertension. The patient was monitoring endoscopy with eradication of esophageal varices, mild congestive gastropathy was reported. **Conclusions.** Patients INCPH Course have more benign than cirrhotic and liver function is usually preserved. The INCPH was characterized by the presence complications of portal hypertension. The gastroesophageal varices are present in 85-95% at the time of diagnosis.

No potential conflict of interest by the authors.

## 10
## PREVALENCE OF POLYMORPHISM RS738,904 PNPLA-3 [I148M] IN MEXICAN POPULATION AND ITS RELATIONSHIP WITH BODY MASS INDEX (BMI)

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**Introduction.** Overweight and obesity are harmful physiological condition in an individual's health. According to

ENSANUT 2012, Mexico has reached 1st place of obesity in children and 2nd place in adult, global population. Variants SNP PNPLA-3 rs738409 [I148M] C/G, gene specifically the G allele has been associated with alterations in the regulation of storage, disposal of energy as well as increased susceptibility to liver damage by the accumulation of fatty acids. **Objective.** To determine the prevalence of the rs738409 polymorphism PNPLA -3 gene in Mexican population and its possible relationship with BMI. **Material and methods.** Cross-sectional study. Prior informed consent 117 subjects (77 men and 40 women) donors in Blood Bank, with an average age of 34.4 ± 17 years were included all subjects had negative serology for HCV, HBV and HIV infection, and descendants of Mexican parents and grandparents. Genomic DNA from peripheral blood samples was obtained. PNPLA3 genotyping was performed by real time PCR and dissociation curves (Design Mix Kit Light TibMolBiol) in GGAGGGATAAGGCCACTG TAGAAGGG[C/G]ATGAAGCAGGAACATACCAAGGCCT sequence. BMI was determined according to WHO criteria. Frequency and proportions were calculated using SPSS v.21 program. And Hardy Weinberg model was applied. **Results.** In the studied population the prevalence of PNPLA-3 polymorphisms was: CC 21.3%, CG 47.1% and GG 31.6%. The table shows the distribution of polymorphisms according to BMI. **Conclusions.** In this study we found a high prevalence of the risk G allele (heterozygous CG or homozygous GG) of PNPLA3 gene in Mexican population. However, due to the low proportion of subjects with obesity, it is necessary to increase the sample size to determine the prevalence of PNPLA3 genotypes in this subgroup.

## 11
## PRETREATMENT SCORING MODEL (PRET-SM) AS A PREDICTOR OF SUSTAINED VIROLOGICAL RESPONSE (SVR) IN PATIENTS WITH CHRONIC INFECTION OF HEPATITIS C VIRUS (HCV) GENOTYPE 1

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**Background.** There are factors related to the virus and the host as independent predictors of SVR. The pre-TSM was developed and validated by Bauer Martinez, *et al*. (2006) using independent variables associated with SVR (baseline viral load, AST / ALT ratio, serum cholesterol and Forns index). Low scores (≤ 7.0) were associated with SVR with high positive predictive value and specificity ≥ 90%. Objective: To evaluate the usefulness of pre-TSM with a value ≤ 7 to predict SVR in a cohort of Mexican patients with chronic HCV genotype 1 virus. **Material and methods.** A retrospective single center study. Patients of either gender, over 16 years old, with chronic HCV genotype 1 naïve they have been treated with pegylated interferon alfa 2a or 2b plus Ribavirin between 2008 and 2014 were included. Statistical analysis was performed using frequencies, percentages and medium ranges; for comparison between groups we used the Student t test, Pearson test, $\chi^2$ test and logistic regression. **Results.** 77 patients were included, of whom 54.5% are women and 45.5% men with average values of 46.6 years old, 31.2% had SVR. In the logistic regression analysis significant influence ($p < 0.05$) between pre-TSM ≤ 7, low viral load, IL 28 polymorphism CC, no advanced fibrosis and subtype 1a groups with the presence of SVR. **Conclusions.** This study showed that Pret-SM with a value ≤ 7 predicts SVR to treatment with pegylated interferon plus ribavirin, may be a useful tool in making decisions on individual basis to improve effectiveness and reduce side effects and costs associated therewith.
The authors declare that there is no conflict of interest.

## 12
## FREQUENCY OF DIETARY SODIUM RESTRICTION IN AMBULATORY CIRRHOTIC PATIENTS

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**Background and aim.** Although management of patients with uncomplicated ascites includes a low sodium intake and diuretics, there is limited information about how frequently patients receive restriction as part of their treatment. The aim of the study was to identify the frequency of dietary sodium restriction in ambulatory cirrhotic patients. **Material and methods.** Cross-sectional study in ambulatory patients with cirrhosis, who were studied at the Gastroenterology Department of Centro Médico Nacional Siglo XXI. Anthropometric, clinical-nutritional, biochemical, and dietetic parameters were assessed. Energy, protein and sodium dietary intake were estimated based on a 24-h dietary recall and food frequency questionnaires. Child-Pugh index was estimated and the use of diuretics registered. **Results.** One hundred twenty-eight patients with liver cirrhosis were included, with median age of 56.66 ± 13.66 years. They were classified according to the Child-Pugh index as A = 56, B = 58 and C = 14, and according to the severity of ascites they were classified as without ascites (n = 80), mild (n = 3), moderate (n = 38) and severe (n = 7). Frequency of dietary sodium restriction was 51.66% (n = 66). The average daily intake of sodium was 45.62 ± 29.1 mEq (reference value = 86.9 mEq). Sodium blood levels were under the reference value in 7/34 (20.6%) patients with dietary sodium restriction and diuretics, compared to 1/32 (3.1%) of those who had only sodium restriction ($p = 0.055$; Fisher's exact test). **Conclusions.** The results suggest a high frequency of dietary sodium intake restriction in ambulatory patients with liver cirrhosis, and support the importance of monitoring patients who concomitantly have a low sodium intake and diuretics treatment.
Conflict of interest none declared. This research was partially supported by Research Grant SALUD-2014-1-233823 from CONACyT.

### 13
### SCREENING TOOLS AND ITS CORRELATION WITH OBJETIVE ASSESSMENT OF NUTRITIONAL STATUS IN PATIENTS WITH LIVER CIRRHOSIS

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**Introduction.** Malnutrition (MN) is frequent in liver cirrhosis (LC), the prevalence is varied, but is estimated between 25 and 80%, regardless of etiology. Although there are several screening tools for diagnosis of MN in hospitalized patients, there is no gold standard for nutritional assessment in LC patients, however it has been recommended the use of any other screening tool for nutritional status as SGA (Subjective Global Assessment), the MUST (Malnutrition Universal Screening Tool), RFH-GA (Royal Free Hospital Global Assessment) and BMI-LC (Body Mass Index for patients with LC). Objective Assessment (OA) or also known as ABCD, shows in detail the nutritional status of a patient however it take more time and resources to obtain data and classify the nutritional status of the LC patient. **Objective.** To evaluate the correlation of different screening tools with ABCD (objective) assessment in hospitalized patients with LC for the diagnosis of nutritional status. **Material and methods.** Cross-sectional study in hospitalized patients with LC who had the complete nutritional status assessments SGA, MUST, RFH-GA; were compared with objective nutritional assessment (ABCD) using Spearman correlation to evaluate the interdependency between screening tools. We use SPSS v20. **Results.** 55 patients recruited from march 2015 to march 2016 were included. The median age was 52 years, being 55.3% women, 34.5% were in stage Child-Pug B and 19% in C, 24.1% were classified as malnourished according to BMI-LC for cirrhotic patient, 79.3% by SGA, 51.7% according MUST, according RFH-GA 72.4% and 65.5% according OA. Correlation of 0.35 for SGA ($p = 0.008$), 0.29 for RFH-GA ($p = 0.028$) for MUST 0.02 ($p = 0.844$) and -0.20 for BMI-LC ($p = 0.144$) were obtained. **Conclusions.** According to this study, SGA and RFH-GA can be used as screening tools for nutritional status in patients with LC, not the MUST or BMI-LC classification which tend to underestimate malnutrition in these patients. Ideally clinicians should continue using the objective assessment or a screening tool that includes specific indicators to detect malnutrition in these patients.

## VIII. TRANSPLANT

### 01
### HCV GENOTYPES AROUND THE ORTHOTOPIC LIVER TRANSPLANTATION AND POLYMORPHISM Q80K

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**Introduction.** Chronic hepatitis C virus (HCV) is the main indication for orthotopic liver transplantation (OLT) in Mexico. HCV genotype and mutations are predictors of response to antiviral treatment, including new free therapies Interferon (IFN). Genotypes 1a and 1b are most common. The Q80K polymorphism in genotype 1a has a prevalence of USA up 45% and is associated with a lower rate of sustained virological response (SVR12) compared to those without the polymorphism (58.3% vs. 83.6% respectively). **Objectives.** Identify HCV genotypes and subtypes in patients sent to evaluation for liver transplantation and post-transplant patients. Find Q80K polymorphism prevalence in patients with genotype 1a. **Material and methods.** Retrolective and descriptive study. Patients in evaluation for liver transplantation were analyzed and post transplantation for HCV; demographic and biochemical variables were analyzed; means, standard deviation for descriptive and Student T and Pearson correlation coefficient variables were used. Statistical analysis with SPSS v21.0. Statistical significance at $P < 0.05$. **Results.** Paired and grouped 100 patients were included; men (59%), average age 64 years ± 10, 28 (40%) had hepatocellular carcinoma (HCC). Genotypes found were 20 patients with 1a (20%), Q80K Positive 10 (10%), 1b 68 (68%), genotype 2a (6%) and 2b 3 (3%), three patients (3%) with indeterminate genotype. Genotype 1b was associated with a greater proportion of HCC (58%), RG (60%) and failure in the response to previous treatment (100%) compared to the other genotypes p: 0.01. **Conclusions.** Polymorphism prevalence Q80K in genotype 1a was similar to the literature (50%). 1b genotype was more prevalent in our institution, which was associated with risk of hepatocellular carcinoma and treatment failure.

### 02
### PREVALENCE OF HEPATOPULMONARY SYNDROME AND HEPATOPULMONARY IN PATIENTS VALUED FOR LIVER TRANSPLANT, GRAVITY AND ITS CLINICAL SIGNIFICANCE

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**Introduction.** Hepatopulmonary syndrome (HPS) and the portopulmonary syndrome (PPS) are two entities that develop in cirrhotic patients with portal hypertension (PHT). The SHP is the most frequent complications of cirrhosis (CH), although little prioritized by the few manifestations they produce. The SPP is one of the complications that more attention is put on the risk of a future contraindication for liver transplantation. **Objective.** Identify the prevalence of syndrome hepatopulmonary and portopulmonary in cirrhotic patients in liver transplant protocol and related to the severity and other complications of the disease. **Material and methods.** Retrolective and descriptive study, cirrhotic patients assessed for liver transplantation from 2010 to 2015 were studied; demographic, biochemical, and clinical variables were analyzed. For descriptive variables mean, range and standard deviation were used; for related samples and use correlation coefficient Student *T* and Pearson. Statistical

analysis with SPSS v.21.0 statistical significance and value of P < 0.05. **Results.** 200 patients were included; 51% men, mean age 50 ± 12 years, mean Child-Pugh B (9 pt ), MELD 18 ± 5; more frequent etiologies were HCV 21%, cryptogenic 14%, PEC 8%; 57 patients (29%) had hepatic carcinoma; 62% had complications such ascites, 50% encephalopathy and 20% variceal bleeding. A prevalence of 82% of HPS and 13% of PPS was found. Pa02 mean value was 73 mmHg ± 9 and sat02 average was 93% ± 6. Echocardiogram average PASP was 31 mmHg ± 7 and LVEF was 72% ± 6. A direct correlation with Pa02 values and intrapulmonary shunt and passage of bubbles was found (p = 0.001) in the same way that was significant correlation values PSAP and intracardiac shunt (p = 0.001) was found. On the other hand, low Pa02 values correlated with higher scores on the Child-Pugh, MELD patients (p < 0.001). **Conclusions.** Hepatopulmonary syndrome is a common complication of cirrhosis and is underestimated. We associated with more severe disease when you have low values of Pa02. Pulmonary Hypertension is a cause of contraindication to OLT.

## 03
## LYSOSOMAL ACID LIPASE DEFICIENCY IN PATIENTS SENT TO VALUATION OF LIVER TRANSPLANT, A STUDY OF CASE AND CONTROLS

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**Background.** Deposition disease cholesteryl ester (DDCE) is caused by deficient or null activity of the lysosomal acid lipase (LAL) levels < 40 pmol/hr/spt, by LIPA gene mutation. The prevalence in Caucasians and Hispanics is (1:90,000/170,000). Adults may have hypertransaminasemia, dyslipidemia (HDL-C levels < 40 mg/dL and LDL-C > 130 mg/dL), microvesicular steatosis, fibrosis and cirrhosis may have been diagnosed as cryptogenic cirrhosis (CC). **Aim.** Identify the prevalence of LAL-D in Patients evaluated for orthotopic liver transplantation (OLT) and compare levels of LAL with a group of healthy controls. **Material and methods.** Retrospective, transversal and descriptive study; Patients were analyzed and compared, for evaluation and randomly matched from pre OLT, post OLT and a group of healthy controls. Demographic and biochemical variables (LAL levels and lipid profile) were analyzed. Means, standard deviations, and ranges descriptive variables, T-test for related samples and test for nonparametric correlations Pearson correlations were used. SPSS v21.0 statistical analysis, p < 0.05 statistically significant. **Results.** Control healthy group (group 1) 18 patients (14%), post-OLT 74 (group 2) (57%) and pre-OLT (group 3) 38 (29%): 130 patients divided into three groups were included. 66 women (51%); mean age 51 ± 13 years; average levels of lipase 178 pmol/hr/ spt ± 118; average HDL-C 43 mg/dL ± 15 and mean LDL-C 88 mg/dL ± 36; Were the mean lipase levels 301 pmol/hr/spt. Similar demographic characteristics to analyze each group; average levels in each group was 1: 301 ± 170, group 2: 189 ± 122 and 3: 152 ± 73. Between correlation etiology and lipase levels (0.002), the study group and lipase levels (0,000) and lipase levels and HDL -c (0.001) was found. **Conclusions.** Lipase levels and lipid profile were lower in the group Pre and Post OLT compared to the control group. With direct correlation to the levels of lipase and each study group and etiology of cirrhosis was obtained.

## 04
## FIBROSIS REGRESSION AFTER TREATMENT WITH TRIPLE THERAPY IN PATIENTS WITH LIVER TRANSPLANT FOR HEPATITIS C VIRUS

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**Background.** HCV recurres immediate and universally in patients post-orthotopic liver transplantation (P-OLT) with detectable RNA at transplant. Triple therapy (TT) based IFN-peg + RBV+ protease inhibitor (PI) is indicated in HCV genotype 1 (GT1), with SVR up to 75%. If the HCV is eradicated, has been a regression in the degree of inflammation and hepatic fibrosis. **Aim.** Determine the degree of fibrosis in patients P-OLT with HCV recurrence before and after treatment with TT. **Material and methods.** Retrolective and descriptive study. Six patients were analyzed P-OLT HCV recurrence and fibrosis treated with TT (IFN-peg + RBV + IP), transient elastography (ET) (Fibroscan®) was performed after sustained viral response (SVR) and compared with histopathology prior to treatment. Demographic, clinical, biochemical variables were analyzed. For descriptive variables mean, range and standard deviation were used. For correlation of related samples T Student. Statistical analysis with SPSS v21.0. Statistical significance at P < 0.005. **Results.** Six patients were included. 100% men, mean age 53 ±9 years; GT1b 5 (83%), IL-28b. Immunosuppression with tacrolimus 3 (50%), cyclosporin-A 3 (50%). All were treated with TT and got 100% SVR. Comparing the histological pattern prior to treatment and post treatment ET regression of fibrosis was found (3 patients F3 to F1, 2 patients F2 to F1 and 1 was kept in F3). A rapid viral response with greater regression of fibrosis after treatment was correlated (P = 0.02). **Conclusions.** TT treatment is effective in eradicating HCV and regression of fibrosis in patients P-OLT with 100% SVR at 24 weeks.

## 05
## STEATOSIS AND FIBROSIS IN POST-LIVER TRANSPLANT PATIENTS AND ITS RELATION TO NUTRITIONAL STATUS

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**Background.** Recent studies have found a prevalence of 56.4% of steatosis in post-transplant patients, including severe steatosis, which is associated with increased body mass index (BMI), changes in triglyceride levels and type 2 diabetes. **Aim.** To de-

scribe the frequency of steatosis and fibrosis in patients post liver transplant and its relation to nutritional status. **Material and methods.** In a cross sectional descriptive exploratory study which included post liver transplant patients, it was measured weight, height, waist circumference, hip circumference and skinfold, blood chemistry and lipid profile. It was measured the degree of steatosis (S0 to S3) and fibrosis (F0 to F4) with transient elastography (Fibroscan). The data analysis was performed using SPSS v.20. **Results.** 22 post liver transplant subjects (50% women) with an age range of 34-68 years (median 56.5) were evaluated. These subjects had among 2 months to 11 years of transplanted. Comorbilities such as diabetes and hypertension were observed on the 22.7% of the individuals, 31.7% presented a degree of fibrosis and 41% a degree of steatosis. It was observed that the individuals with low steatosis presented higher weight ($p = 0.038$) and changes on creatinine levels ($p = 0.005$), BUN ($p = 0.047$) and urea ($p = 0.047$) *vs.* steatosis abscence. On the other hand, individuals with severe fibrosis (F3 and F4), presented an arm circumference and suprailiac skinfold over the normal parameters ($p = 0.031$) and ($p = 0.033$). There was no statistical significance in another degree of steatosis and fibrosis or any other biochemical or anthropometric parameter. Individuals began to present steatosis approximately 3 months after surgery. **Conclusion.** A high percentage of post transplanted individuals have some degree of steatosis and fibrosis, as well as trend changes in anthropometric and biochemical parameters.

## 06
## IMPACT ON THE QUALITY OF LIFE IN PATIENTS IN WAITING LIST FOR ORTHOTOPIC LIVER TRANSPLANTATION (OLT) AFTER A NUTRITIONAL INTERVENTION

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**Background.** Chronic liver diseases have major impact on the quality of life of patients, symptoms such as fatigue, muscle and joint pain, loss of appetite, digestive problems, anxiety, depression and other emotional problems that affect their quality of life. **Aim.** To evaluate the quality of life in patients with liver hepatic cirrhosis in OLT. **Material and methods.** Patients in waiting list, who were rated on a nutritional consultation, were assigned in two groups: 1) Received a standardized diet and a supplementation based in BCAA (500 kcal, 18.6 g/Ps, 71 g/Hc), 2) A standardized diet and a standard homemade polymeric blend (480 kcal, 19g / Ps, 63g/Hc). Inclusion criteria: phase angle < 5.4° by bioelectrical impedance, non-dominant hand dynamometry <30 kg/F men < 20 kg/F women). Quality of life was analyzed by SF36 v.2 questionnaire. Measurements and questionnaire at baseline and 60 days after supplementation were applied. The description and comparison between groups was performed using SPSS v.20 statistical package with $p < 0.05$. **Results.** Thirty-five patients were included 18 patients in the BCAA group and 17 control group. The most common etiologies were CBP 8 (22.9%), HCV 7 (20%). The mean age was 50 years (23-67), female 19 (54%). Table 1 shows results of quality of life. **Conclusions.** The impact on quality of life increases favorably in both groups after the interventions, although there are no statistical significant differences. Quality of life was improved in subgroup analyzes in the intervention group in physical role and perception of pain.

## 07
## IMPLICATION OF OBESITY IN THE EVOLUTION POST ORTHOTOPIC LIVER TRANSPLANTATION AT 24 MONTHS COMPARED WITH A CONTROL GROUP

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**Background.** The incidence of obesity in Mexico has increased; thus the prevalence of obese candidates for liver transplantation (LT) is greater. Because of this, it is important to keep track post orthotopic liver transplantation (LT) in obese and assess whether outcomes are appropriate. **Aim.** Evaluate the implication of obesity in the evolution post LT after 24 months in comparison with a control group with normal weight. **Material and methods.** Fifty-two patients post LT were studied; 28 were cases of overweight/obesity (20 and 8 respectively) 15 men and 13 women; cryptogenic etiology: 9, HCV: 7, autoimmune: 5, alcoholic: 2 and others: 5; of the total 6 with hepatocarcinoma,

**(VIII.06) Table 1.** Quality of life results and measurements.

| | Baseline 0 days | | Final 60 days | | |
|---|---|---|---|---|---|
| | Intervention Group 1 n = 18 | Control Group 2 n = 17 | Intervention Group 1 n = 18 | Control Group 2 n = 17 | P |
| Weight (kg) | 58.16 ± 11.94 | 59.62 ± 8.50 | 59.10 ± 11.17 | 59.97 ± 8.70 | 0.8 |
| Triceps skinfold (mm) | 13.47 ± 7.15 | 14.38 ± 5.02 | 13.68 ± 7.17 | 14.82 ± 4.86 | 0.59 |
| Phase angle | 4.17 ± 0.95 | 4.60 ± 0.85 | 4.38 ± 1.26 | 4.57 ± 0.79 | 0.65 |
| *Physical function | 400 ± 261.21 | 614.71 ± 273.72 | 497.22 ± 283.60 | 576.47 ± 245.66 | 0.38 |
| *Vitality | 168.89 ± 95.60 | 185.88 ± 107.18 | 194.44 ± 74.45 | 209.41 ± 72.84 | 0.55 |
| *Social function | 111.11 ± 60.76 | 125 ± 61.87 | 129.17 ± 55.73 | 135.29 ± 55.94 | 0.74 |
| *Pain | 102.78 ± 59.61 | 110.59 ± 64.07 | 140.00 ± 49.76 | 118.53 ± 62.41 | 0.27 |

*t-Student, significant p < 0.05 (*SF36).*

Child A: 4, Child B: 12, Child C: 12; Meld 18 ± 6. And we evaluate 24 controls with normal weight. Anthropometric and biochemical data was obtained before LT and at the 3, 6, 12 and 24 months post LT. Survival was evaluated and results posts LT were compared. Statistical Package SPSS V.21 (p 0.05). **Results.** Baseline characteristics between cases and controls were similar, although cryptogenic etiology was more prevalent in cases (28.6 *vs.* 22.5% p 0.05). Survival was 100 % in both groups at 24 months. BMI decreased at 3 months post-transplant in both groups but was higher in cases (2.4 *vs.* 1.3 , respectively) and in following 24 months, a gradual increase was observed in both groups, being higher in the control group (4.3 *vs.* 2.7 p 0.0001). When comparing creatinine between overweight and obese, persistent elevation was observed at 6, 12 and 24 months in obese without exceeding 1.81 mg/dL (p 0.01). The incidence of acute rejection in both groups was not significant (2 *vs.* 4 p 0.39). **Conclusions.** There were not significant differences in survival of obese patients post LT to 24 months compared with normal weight. BMI had a higher diminution in obese at 3 months and the increase was higher in normal weight at 24 months. Therefore the nutritional management should be an integral part of pre-LT and post-LT in both groups.

## 08
## SARCOPENIA IN OBESE PATIENTS WITH CIRRHOSIS EVALUATION FOR LIVER TRANSPLANTATION

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**Background.** Malnutrition is a complication in cirrhosis. It's an independent predictor of mortality and should be considered an important factor. Sarcopenia is a state of malnutrition and predicts worse prognosis after transplantation; still it can be masked in patients with obesity. **Aim.** Determine the prevalence of sarcopenic obesity in patients with liver transplant evaluation. **Material and methods.** Thirty-one obese cirrhotic patients were evaluated (Table 1). Child A (6), Child B (13), Child C (12); Meld (15 ± 4). Assess obesity, % fat measured by bioimpedance (M > 30%,F > 40%). Sarcopenia was diagnosed and classified by bioimpedance, hand dynamometry, 6-min walk; according to criteria of the European Working Group on Sarcopenia in Older People: skeletal muscle mass index (SMMI), muscle strength and physical performance. SPSS v21 statistical package and $p < 0.05$. **Results.** Measurements in 31 patients (Table 1). Sarcopenic obesity found in 96.8%, 3.2% had presarcopenia ($p < 0.05$). All had at least one of three criteria for sarcopenia. 40% had severe sarcopenia, 38.4% were Child B, 50% Child C. 58.3 % diabetic (p 0.045). Etiology, encephalopathy, ascites, bleeding and hepatocarcinoma, had no differences. **Conclusion.** Sarcopenic obesity in cirrhosis has high prevalence. Almost half have severe sarcopenia and this is more common in those with diabetes and Child C. Treatment prior transplant might improve outcomes.

## 09
## INFLAMMATORY INDICATORS DECREASE WITH BRANCHED CHAIN AMINO ACID SUPPLEMENTATION IN PATIENTS WITH CIRRHOSIS SENT TO LIVER TRANSPLANT EVALUATION

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**Background.** Liver cirrhosis (LC) triggers a chronic inflammatory response and oxidative stress consistent with elevated levels of proinflammatory cytokines perpetuating the inflammatory state and causing cell damage; producing reactive oxygen species have been implicated in the induction of proteolysis in striated muscle by activating the ubiquitin-proteasome system, promoting muscle wasting in people with LC. The branched chain amino acids (BCAA) interact with the ubiquitin-proteasome system attenuating muscle wasting, and can be therapeutic aids to prevent progressive and permanent loss of fat-free mass, and therefore reduce the risk of complications of the disease, and morbidities associated

**(VIII.08) Table 1.** Measurements to diagnose sarcopenic obesity in 31 cirrhotic patients.

| | n = 31 | F n = 16 | M n = 15 | p* |
|---|---|---|---|---|
| Age (years) | 56 ± 7 | 59 ± 5 | 53 ± 8 | 0.031 |
| BMI (kg/m$^2$) | 33.7 ± 3.5 | 33.6 ± 3.1 | 33.8 ± 3.9 | 0.845 |
| BIA | | | | |
| Fat (%) | 44.6 ± 8.1 | 46 ± 8.7 | 43 ± 7.4 | 0.313 |
| Muscle mass (%) | 12.1 ± 2.6 | 10.6 ± 1.9 | 13.8 ± 2.2 | 0.000 |
| Muscle mass (kg) | 10.4 ± 3.6 | 8.1 ± 1.6 | 12.8 ± 3.7 | 0.000 |
| SMMI (muscle mass in kg/height m$^2$) | 4.08 ± 0.04 | 3.5 ± 0.69 | 4.6 ± 1.03 | 0.001 |
| Muscular strength | | | | |
| Palmar grasp (kg) | 17.7 ± 6.8 | 13.8 ± 3.7 | 21.8 ± 7 | 0.000 |
| Physical performance | | | | |
| Six minute walk (m) | 370 ± 60 | 358 ± 38 | 382 ± 77 | 0.276 |
| Walking speed (m/sec) | 1.02 ± 0.15 | 0.9 ± 0.11 | 1 ± 0.18 | 0.364 |

*BMI: body mass index. BIA: bioimpedance analysis. SMMI: skeletal muscle mass index. p* = t-Student.*

**(VIII.09) Table 1.**

| | TNFα | | p* | IL6 | | p* | Leptin | | p* | Insulin | | p* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | B | M2 | | B | M2 | | B | M2 | | B | M2 | |
| Enterex | 20.5 | 16.9 | 0.017 | 36.2 | 16.9 | 0.776 | 5,345 | 2,004 | 0.019 | 545 | 1966 | 0.554 |
| Snack | 25.9 | 24 | 0.972 | 22.3 | 25 | 0.530 | 5,169 | 4,706 | 0.152 | 481 | 537 | 0.311 |
| p** | 0.233 | 0.047 | | 0.315 | 0.461 | | 0.983 | 0.917 | | 0.464 | 0.233 | |

** Wilcoxon test. ** Kruskal-Wallis test. B: baseline. M2: measure mont 2. p: significant a value < 0.05.*

with surgical transplant process. **Aim.** To evaluate the effect of BCAA supplementation vs. a polymeric standard snack on inflammatory markers in cirrhotic patients evaluated for liver transplantation. **Material and methods.** Randomized clinical trial with follow up to two months. Thirty patients, 17 of which were supplemented with a semi-elemental formula *vs.* standard food-based snack with the same caloric load and the same distribution of nutrients. Biochemical methods were performed by EIA in peripheral blood (MAP MILLIPLEX human kit) for: leptin, insulin, TGFa, TNFa, IL6. Statistical analysis was performed using SPSS v21 taking as significant a value of $P < 0.05$. **Results.** We found significant decrease in TNFa, leptin and resulting in decreased inflammation and anorexia. **Conclusions.** Supplementation with AACR-based formula had a tendency to decrease the inflammatory process in these patients. While it is necessary to increase the time of supplementation and population.

## 10
## RETROGRADE CHOLANGIOGRAPHY ENDOSCOPY WITH SINGLE BALLOON ASSISTED ENTEROSCOPY (RCE-SBAE) FOR TREATMENT OF ANASTOMOTIC BILIODIGESTIVE STRICTURE IN LIVER TRANSPLANT. REPORT OF 3 CASES

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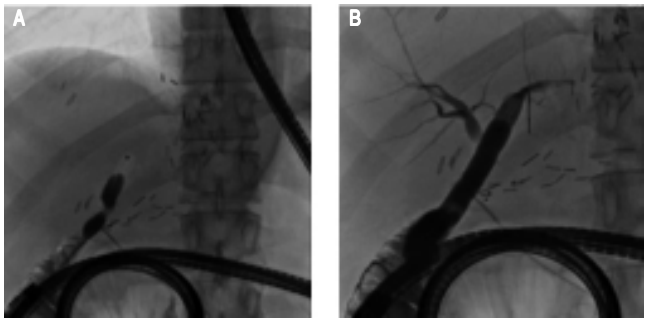
**Background.** Endoscopic treatment of anastomotic biliodigestive stenosis is often a difficult procedure and may require percutaneous transhepatic biliary drainage or reoperation. With the introduction of assisted single balloon enteroscopy, there has been an improvement in endoscopic techniques for resolution of surgical complications in patients with altered gastrointestinal anatomy. It has led to the development of techniques for stone extraction, stenting and dilation. We present three patient cases with orthotopic liver transplantation (OLT) and biliodigestive surgery (BDS). **Case report.** Case 1: 38 year's old male with OLT secondary to chronic infection for active HCV. After severe bile leakage he was submitted to biliodigestive surgery with subsequent biliodigestive anastomosis stenosis. Case 2: 67 years old male with OLT secondary to non-alcoholic steatohepatitis. He presented coledochal anastomosis stenosis, with complications secondary to metallic prosthesis, who required BDS caused by the disfunction of the metallic prosthesis. Case 3: 54 years old male with OLT secondary to VHB infection, who presented coledochal anastomosis stenosis, being performed endoscopic treatment without resolution, finally submitted to BDS. During the procedure, a prosthesis was used to make viable the anastomosis, with subsequent occlusion. It was performed RCE-SBAE in the three patients. In the first two cases, pneumatic dilation was performed, achieving stenosis resolution. In the third case, the prosthesis was taken out, normal biliary anatomy was observed, without any complication. **Conclusion.** The RCE-SBAE had a high success rate in patients with altered gastrointestinal anatomy, so it should be considered as first-line intervention, in patients who requiered access to billary duct such as gastric by-pass with Y Roux, hepatic-jejunostomy or in Whipple procedure.




***(VIII.10) Figure 1. A.*** *Anastomotic biliodigestive stricture.* ***B.*** *Pneumatic dilation of stricture.*

## 11
## EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS OF PATIENTS REFERRED FOR EVALUATION FOR LIVER TRANSPLANTATION IN TRASPLANT UNIT OF HOSPITAL GENERAL CENTRO MÉDICO NACIONAL LA RAZA, IMSS

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**Background.** At present, liver transplantation (LT) is considered the treatment of choice for acute and chronic terminal liver disease. **Aim.** To describe the number, clinical and epidemiological characteristics of patients referred for liver transplantation evaluated for Transplant Unit of Hospital General Gaudencio González Garza, Centro Médico Nacional La Raza, IMSS. **Material and methods.** Cross-sectional, observational, descriptive study of epidemiological and clinical characteristics of patients sent to be evaluated for liver transplantation in the Transplant Unit of Hospital General Gaudencio González Garza, CMN La Raza, January 2014 to May 2016. **Results.** In the

period January 2014 to April 1, 2016 were evaluated in the liver Transplant Unit HG CMN La Raza, IMSS, 58 patients referred from other hospitals for liver transplantation IMSS. Most males (51.70) average age of 43.79 years. The main etiologies of patients referred by order of frequency were: HCV infection (51.72%), cryptogenic (13.79%), primary biliary cholangitis (13.70%), nonalcoholic fatty liver disease (5.1%), chronic alcohol abuse (5.1%), Alagille syndrome (3.4%), Budd Chiari syndrome (1.70%), polycystic liver disease (1.7%), hepatocellular carcinoma (1.7%), secondary biliary cirrhosis (1.7%). MELD score (Model for End Stage Liver Disease) obtained in the first visit between 7-11 points (32.75%), 12-15 points (31.06%) among 16 evaluated - 20 points (32.75%) and more than 21 points (3.44%). In 65.51% has been initiated study protocol for liver transplantation, these patients 43.10% are on the waiting list, 56% (14 patients) of them have been transplanted and 16 % died. **Conclusions.** Similar to other centers the main indication for transplantation was liver cirrhosis HCV and selection of patients eligible for TH was performed by MELD score. We observed that the number of patients referred to our center to be evaluated for liver transplantation is low, considering that it is important to more widely in the medical field that patients benefit from performing a liver transplant would be and when should be referred to a tertiary care center for evaluation.

### 12
### WALK TEST SIX MINUTES PREDICTOR OF PERIOPERATIVE COMPLICATIONS IN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION

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**Background and aim.** Six-minute walk is a simple test that measures the overall physical function, has a prognostic value in morbidity and mortality in other clinical settings, but there is no solid evidence that this assessment will play the same in patients undergoing liver transplantation orthotopic (OLT). It is noteworthy that these patients suffer hemodynamic changes, muscle and nutritional value, resulting in a physical deconditioning. The aim correlate the delta six-minute walk with cardiovascular (CV) and pulmonary complications, vasopressor hours and days of stay in intensive care unit (ICU). **Material and methods.** A retrospective, correlational that included 39 patients undergoing OLT in INNSZ the period January to December 2013. The statistical analysis was performed using SPSS version 15, using ANOVA test, Student *t,* Chi square, Pearson correlation and Tau Kendall. Three patients with incomplete records were excluded. **Results.** Thirty-six were included in the study. The average age at THO was 45 years, 57.7% were men and 42.3% women. The 3 main causes of liver disease were cryptogenic, hepatocellular carcinoma associated with HCV and autoimmune hepatitis. 72% of the patients studied had six minute walk, with an average distance of 392 m. a correlation between increased distance walked lower MELD-score and Child-Pugh and a tendency of delta six-minute walk proportional to MELD-score in relation to predicted was found. **Conclusions.** The study showed no correlation of distance traveled, or delta six-minute walk with vasopressor hours, days in ICU, cardiovascular and pulmonary complications in the perioperative period. There is a tendency to lower distance to most Meld-score and Classification of Child-Pugh therefore can be a starting point for generating research and information about the six-minute walk and its correlation with sarcopenia and mortality THO.

## IX. LIVER TUMORS

### 01
### HEPATIC EPITHELIOID HEMANGIOENDOTHELIOMA: A CASE REPORT

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**Introduction.** Hepatic epithelioid hemangioendothelioma (HEH) is an uncommon vascular neoplasia with aggressive behavior. Diagnosis is complex, by presenting variable clinical features and non-specific data imaging studies, requiring histopathology with immunohistochemistry. Treatment is surgical, including liver transplantation even in advanced disease. **Objective.** To report an acute hepatitis case secondary to HEH. **Material and methods.** We present a 38-years-old woman, without risk factors for chronic hepatopathy, isoniazid treatment recent history, with jaundice for two weeks, elevated aminotransferases, prolonged prothrombin time and direct hyperbilirubinemia; finding ascites with an albumin gradient suggestive of portal hypertension. Doppler ultrasonography rule out portal thrombosis, triphasic abdominal tomography showed nodular hepatic parenchyma, hypodense areas in II, VI and VII segments, ill-defined at single phase, periportal and subcapsular hyperdensity at venous phase, 14 mm portal vein and ascites. Laparoscopic liver biopsy reported histopathological diagnosis of HEH. **Discussion.** HEH is a rare tumor with heterogeneous presentation, it may course asymptomatic or nonspecific symptoms such as abdominal pain, hepatomegaly and weight loss, even can present portal hypertension due to tumor dissemination into hepatic terminals venules. In this case HEH is presented as acute hepatitis and portal hypertension; finding a vascularized liver lesion and positive CD31 immunohistochemistry. It is difficult to diagnose HEH, imaging studies show a highly vascular lesion, early stage with peripheral nodular lesions affecting the liver capsule and advanced stage with diffuse infiltrating in both hepatic lobes. Up to 40% of cases there are extrahepatic affectation mainly in lung and lymph nodes, in this patient these lesions was rule out. Histopathological features are epithelioid and fusiform dendritic cells with vacuoles and positive immunohistochemistry for endothelial markers (von Willebrand factor, CD34, CD31). Treatment options are resection or liver transplantation. Our patient had progressive deterioration without being a candidate for treatment. **Conclusion.** It is important to consider neoplastic diseases such as HEH within differential diagnosis of acute hepatitis, in order to ad-

dress a specific diagnosis and appropriate therapeutic approach. We declare that we have no conflicts of interest in the authorship or publication of this contribution.

## 02
## HEPATOCELLULAR CARCINOMA AS SECOND LEADING MORTALITY CAUSE BY MALIGNANT NEOPLASM IN HIDALGO, MEXICO: SURVEILLANCE FROM THE MINISTRY OF HEALTH 1990-2013

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**Background.** Hepatocellular carcinoma (HCC) has become worldwide the third leading cause of death by malignant neoplasm. In Mexico, it is essential to perform a proper analysis of the mortality rate by HCC in every single state of our country. **Objective.** To study the mortality rate of HCC in Hidalgo, Mexico from 1990 to 2013 in accordance with the General Department of Health Data. **Material and methods.** Retrospective, cross-sectional and observational study in which a review of the following databases was conducted: General Department of Health Data (Deaths, final official data 1979-2013) INEGI/SS and National Population Council Census and population 2010 (Projections of the population of Mexico 1990-2030). From those databases the following results of malignant liver tumors where obtained: overall mortality rate, annual mortality from 1990 to 2013, mortality rate by gender and age group, mortality cases in various municipalities in the state and the comparison the mortality rate in the state of Hidalgo with the rest of the country. **Results.** Mortality rate of Hepatocellular carcinoma in Hidalgo doubled from 3.08 deaths per 100,000 inhabitants (68 deaths) in 1990 to 6.13 deaths per 100,000 inhabitants in 2013 (172 deaths). 55.4% of the cases were female; the most affected age group was 60 years and older, mostly affecting people aged 70-74 years old. The highest mortality by HCC in our State was in residents of the Mezquital Valley and Huasteca. Finally, comparing the changes in mortality by malignant tumors of the liver in Hidalgo versus national data, we found an increase of 152% from 1990 to 2013, *vs.* 93% nationwide, which places it as the second leading mortality cause associated with any malignant neoplasm in our State. **Conclusions.** In Hidalgo, Hepatocellular carcinoma has become the second leading mortality cause by any malignant neoplasm, with rates and percentages of mortality that exceed those of the rest of the country and with greater impact on female population over 60 years, mainly in the Mezquital Valley and the Huasteca regions.

## 03
## IMPACT OF NASH IN THE ETIOLOGY OF HCC IN THE NORTHEAST OF MEXICO

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**Introduction.** Hepatocellular carinoma (HCC) is the 4th most common cause of death in the state of NL. The incidence is in 7th place. Main risk factors: liver cirrhosis, hepatitis B and C. However, the metabolic syndrome and non-alcoholic steatohepatits (NASH) are increasing considerably. **Material and methods.** We reviewed the cases seen in the Liver Unit with a diagnosis of HCC of December 2011 to December 2015. 26/42 were selected. Male 15 (57%), age 61 ± 10.4y. Etiology: NASH 13 (50%), OH 10 (38%), HCV 3 (12%). Alpha-fetoprotein (AFP) in 22/26 (85%). Diagnosis of HCC was made by biopsy in 16 (62%), the rest by imaging studies and AFP elevation. All had cirrhosis, 1 had in addition Colangio Ca in biopsy. BMI 30 ± 5 k/m$^2$. All had Doppler US, 23 abdominal CAT and 2 MR. **Results.** One lesion: 16 (61%), 2 in 5 pat. (19%), 3 in 1 (4%), multinodular in 4 (15%). Mean size 4.8 ± 5 cm, PH 18 (69%). Elevated AFP in 16/22 (61%) mean 3622 ± 13,333 ng/mL (range 2-67,540 ng/mL). Functional classifications: Child-Pugh: A: 14 (54%); B: 10 (38%); C: 2 (8%). MELD 6-15: 17/22 (77%) and 16-19: 5 (23%). Staging: Okuda 1: 15 (58%); 2: 10 (38%); 3: 1 (4%). BCLC: A: 14 (54%); B: 8 (31%); C 2 (7%): D 2 (7%). 2 (7%) had metastases (lung and bone). Seven pat. (27%) received chemoembolization 1 to 3 times, but 2 for technical difficulties. The rest in the process of receiving it. Only 4 (15%) received liver transplantation (LT). Seventeen patients attended more than once (22 ± 20 m; range 5 to 63 m). **Conclusions.** The most frequent etiology of HCC was NASH. The majority presented one lesion (61%), PH (69%), AFP elevation (61%), All were cirrhotic patients. Most of them have an early staging: Okuda 1 (58%), BCLC A (54%). However only a very small percentage received the benefit of LT.

## 04
## SIMPLE LIVER CYST AND POLYCYSTIC DISEASE INCIDENCE IN THE HOSPITAL JUÁREZ DE MÉXICO

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**Background.** Liver cysts are uncommon and usually asymptomatic pathology diagnosed as incidental findings on an imaging test. They are divided into two categories, parasites and non-parasitic and are subdivided into single or multiple. Simple cysts often produce symptoms when they exceed 5 cm in diameter, requiring sometimes surgical approach. Multiple cysts become relevant for its association with polycystic kidney disease and Von Hippel Lindau disease and the potential for malignant degeneration. In this review the incidence of simple hepatic cyst and polycystic disease is analyzed in the Hospital Juárez de México. **Aim.** To determine the prevalence of simple hepatic cysts and polycystic disease found in the outpatient Department of Gastroenterology Hospital Juárez de México in the period from January 2015 to January 2016. **Material and methods.** Retrospective, descriptive study. Records of patients attending the outpatient area cyst diagnosed with Polycystic Liver Disease Simple and Service Gastroenterology, Hospital Juárez México January 2015 to January 2016 were reviewed. **Results.** Eight patients of which 7 (87.5%) were female and gender 1 (12.5%) male aged between 45 and 61 years old they were reported. Of which 6(75%) were found cases diagnosed with simple and 2

(25%) cyst case of polycystic disease. **Conclusions.** In our series, simple hepatic cysts were more frequent in women, polycystic disease association with both renal and liver was low, only one case, there were no cases of malignant degeneration. Although liver cystic disease is a rare entity, it is important to know the associated complications for proper approach.

## 05
## MANAGEMENT OF HEPATOCELLULAR CARCINOMA WITH CELECOXIB AND PENTOXIFYLLINE: CASE REPORT

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**Background and aim.** Liver cancer causes over one million deaths a year, in Mexico is the fifth leading cause of death for cancer and survival is limited, among other therapeutic regimens like chemoembolization, radiofrequency, cryotherapy, surgery and transplantation are mentioned but the results have not been good. In this study is handled a patient with celecoxib and pentoxifylline, the first is a Cox-2 inhibitor with anti-inflammatory effect, antipyretic, analgesic, reduces tumor growth factors, inhibits prostaglandin, CD 44, among multiple transcription factors, NFK beta, IL 6, STAT3, JAK2, which are involved in immune response antitumor and antiangiogenic. And the second used by its anti-inflammatory, antioxidant, antifibrotic and NFK beta inhibitor effect, so the combination of both drugs suggests have synergistic and antitumor effect. Our objective is to demonstrate the good response presented in a patient with hepatocellular carcinoma with this treatment. **Case report.** Male 60 years old, with a history of 47 years of alcoholism, which manifests encephalopathy, jaundice, anorexia and malaise, diagnosed with cirrhosis 18 months ago, MRI, CT, eco liver and biliary tract, where it shows a large tumor that affects the entire right lobe, after 18 months of treatment at doses of celecoxib 400 mg/day and 800 mg/day of pentoxifylline, their liver function tests improved and its large tumor almost disappeared. Laboratorial changes by comparing the baseline taken and 18 months were TGO 192 18.2 U/L, TGP 115 19.4 U/L, total protein from 5.6 to 3.8 g/dL, albumin 1.8 to 3.6 g/dL, bilirubin 3.6 1.1 mg/dL, ALF 240 to 2.97 mg/L. **Conclusions.** The combination of celecoxib and pentoxifylline has been studied *in vitro* and in vivo with good response in neoplastic processes that have demonstrated an overexpression of Cox-2 especially in hepatocellular carcinoma, so that treatment with celecoxib combined with pentoxifylline synergized the response in this patient. This promising combination invites multicenter studies to know its real effectiveness.
The authors declares that there is no conflict of interest.

## 06
## LIVER CANCER IN ELDERLY MEXICAN WOMEN IS MORE FREQUENT THAN BREAST AND CERVICAL CANCER

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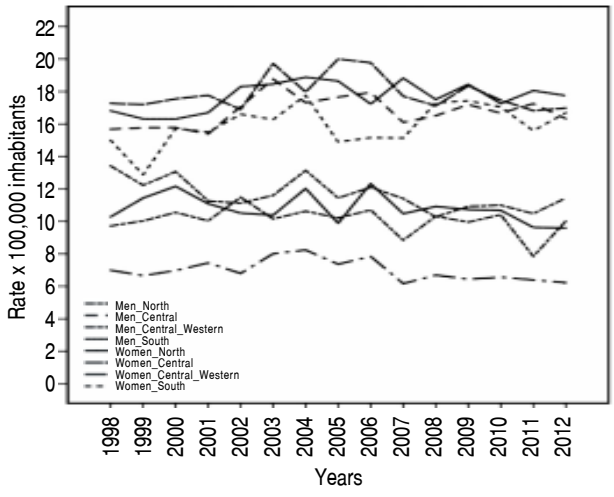
**Background.** Liver cancer incidence and mortality have been on the rise in most areas of the world as a consequence of ageing and population growth. Worldwide liver cancer stands as the second leading cause of cancer death in men and the fifth in women. There are significant regional differences in the prevalence and distribution of major risk factors. In Mexico the main causes of liver cirrhosis are alcohol, viral hepatitis and metabolic syndrome. Obviously, those risk factors have carcinogenic effect and they have been associated with the development of liver cancer. The aim of this study was to investigate the trends of mortality rates of liver cancer in elderly Mexicans. **Material and methods.** Data on national mortality (death certificates) reported for the years 1998-2012 by the Health Ministry of Mexico were analyzed (www.salud.gob.mx). Causes of death related to liver cancer were selected in accordance with the International Classification of Diseases, 10th Revision. Liver Cancer [(C22.0, hepatocellular carcinoma); C22.1 (intrahepatic bile ducts carcinoma); C22.2 (hepatoblastoma); C22.3 (liver angiosarcoma); C22.4 (other liver sarcomas); C22.7 (other specified liver carcinomas) and C22.9 (unspecified malignant liver tumor)]. In order to determine mortality rates, the population at risk (denominators) was based on the official statistics of the Mexican Government (Consejo Nacional de Población y Vivienda). All rates are expressed per 100,000 persons. The projections are reported accordingly of the four geographical regions that were used in the National Health and Nutrition Examination Survey-2012: i) Región Norte: Baja California, Baja California Sur, Chihuahua, Coahuila, Nuevo León, Sinaloa, Sonora and Tamaulipas; ii) Región Centro: Ciudad de México, Hidalgo, México, Morelos, Puebla, Querétaro and Tlaxcala; iii) Región




***(IX.06) Figure 1.***

Centro-Occidente: Aguascalientes, Colima, Durango, Guanajuato, Jalisco, Michoacán, Nayarit, San Luis Potosí and Zacatecas; iv) Región Sur: Campeche, Chiapas, Guerrero, Oaxaca, Quintana Roo, Tabasco, Veracruz and Yucatán. **Results.** In general the projection in the mortality of liver cancer has been remained constant in the whole period in elderly Mexicans. The range of rates were 6.2 (the lowest) to 18.9 (highest) per 100,000 inhabitants ≥ 65 years. The higher mortality rates were seen in men than women at the national level, except in the region Centro. The regions Centro and Sur, both men and women showed the highest mortality rates. **Conclusions.** As a cause of death, liver cancer shows an increasing trend of mortality across the time in all age groups. In elderly population it remains in steady state. However in Mexican elderly women, liver cancer is the main cause of mortality due to malignant tumor with rates around 14 per 100,000 inhabitants (women ≥ 65 years), inclusive more frequent than breast and cervical cancer. Since the main risk factors of liver cancer have high prevalence in Mexico. We can speculate that this will increase in the near future.