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POSTER

01 AUTOINMUNE

P-48
AUTOIMMUNE HEPATITIS IN ELDERLY COLOMBIAN PATIENTS, DIFFERENTIAL CHARACTERISTICS AND OUTCOMES

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Introduction. Elderly patients with autoimmune hepatitis (AIH) are a special population due a well-recognized HLA (Human Leukocyte Antigen) predisposition and an indolent and progressive course, however current information comes from non-Latin American population. **Aim.** To analyze comparatively the characteristics of AIH between patients above and below 65 years regarding its clinical presentation, diagnostic features, response to treatment and outcomes. **Material and methods.** A retrospective cohort study of 214 AIH patients diagnosed using the simplified criteria, between January 2010 and December 2016. Patients with acute liver failure, drug induced AIH and AIH diagnosed < 16 years were excluded. Statistical analysis was performed using SPSS statistical program version 20.1. A P-value < 0.05 was considered statistically significant and was two-tail calculated. **Results.** Twenty-nine (13.5%) patients were ≥ 65 years. Elderly patients more commonly had hypertension (34.5% *vs*. 15.1%, p = 0.011), dyslipidemia (20.7% *vs*. 5.9%, p = 0.006) and cardiovascular diseases (17.2% *vs*. 2.7%, p = 0.001). The most common type of clinical presentation was the acute hepatitis in both groups (31% *vs*. 32.4%, p = 0.881). When evaluating radiological and histologically the liver fibrosis degree elderly patients had a higher frequency of cirrhosis (55.1% *vs*. 33.5%, p = 0.024). Older patients had a higher biochemical remission (100% *vs*. 83.9%, p = 0.022) after treatment. There were no differences regarding the laboratory test, autoantibodies, type of pharmacologic treatment, relapses, treatment related adverse effects, liver transplantation requirement and death. **Conclusion.** AIH affects Colombian adults of all ages and should be considered in the diagnostic work-up of liver disease in elderly because these patients had higher frequency of cirrhosis at time of diagnosis. Early diagnosis of AIH in elderly is important since pharmacologic treatment is effective and well tolerated.

P-99
AUTOINMUNE HEPATITIS-PRIMARY BILIARY COLANGITIS OVERLAP SYNDROME: LONG-TERM OUTCOMES OF A RETROSPECTIVE COHORT IN A UNIVERSITY HOSPITAL

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Background. Autoimmune hepatitis with characteristics of primary biliary cholangitis is known as overlap syndrome. Its prevalence and prognosis have not been properly determined comparatively yet with those with classic AIH. **Material and methods.** A retrospective cohort study was conducted comparing patients diagnosed with AIH and AIH-PBC overlap syndrome, followed up by 7 years in a university hospital in Colombia, until December 31, 2016. All analyzes were per-

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Table 1 (P-48). Patient demographic, clinical, laboratory, treatment and outcomes data.

	Younger patients n = 185	Older patients n = 29	P-Value
Gender, female - n (%)	167 (90.3)	28 (96.5)	0.269
Age at diagnosis, median years (IQR)	47 (35-56)	71 (66-74.5)	<0.001
Follow-up, median months (IQR)	50 (17-80.5)	19 (5.5-37.5)	0.003
Concurrent immune diseases - n (%)	56 (30.3)	9 (31)	0.934
Comorbidities - n (%)			
Hypothyroidism	50 (30.8)	13 (44.8)	0.135
Hypertension	28 (15.1)	10 (34.5)	0.011
Dyslipidemia	11 (5.9)	6 (20.7)	0.006
Cardiovascular disease*	5 (2.7)	5 (17.2)	0.001
Diabetes mellitus	15 (8.1)	4 (13.8)	0.317
Obesity	7 (3.8)	0 (0)	0.284
Chronic kidney disease	1 (0.5)	1 (3.4)	0.130
Clinical presentation - n (%)			
Asymptomatic, abnormal liver test	34 (18.4)	5 (17.2)	0.883
Non-specific symptoms, abnormal liver test	37 (20)	5 (17.2)	0.728
Acute hepatitis	60 (32.4)	9 (31)	0.881
Cirrhosis	39 (21.1)	9 (31)	0.232
No data	15 (8.1)	1 (3.5)	0.375
AST, median U/L (IQR)	226 (99-718)	313 (178-727)	0.770
ALT, median U/L (IQR)	260 (95-698)	222 (105-705)	0.678
Alkaline phosphatase, median U/L (IQR)	178 (116-297)	170 (138-278)	0.827
γ - Globulin, median g/L (IQR)	20 (17 - 25)	18.6 (14.8 - 28)	0.661
ANA ≥ 1:40 - n (%)	142 (76.8)	24 (82.8)	0.471
SMA ≥ 1:40 - n (%)	57 (30.8)	13 (44.8)	0.135
Positive AMA - n (%)	12 (6.4)	0 (0)	0.158
Liver biopsy at diagnosis - n (%)	153 (82.7)	24 (82.8)	0.994
Histological liver fibrosis - n (%)†			
F0-F1	18 (11.8)	3 (12.5)	0.918
F2-F3	42 (27.4)	5 (20.8)	0.495
F4	61 (39.9)	14 (58.3)	0.089
No data	32 (20.9)	2 (8.3)	0.146
Clinical, radiological and histological cirrhosis - n (%)	62 (33.5)	16 (55.1)	0.024
Histological finding - n (%)‡			
Compatible with AIH	48 (31.4)	4 (16.6)	0.141
Typical AIH	105 (68.6)	20 (83.4)	0.141
Simplified diagnostic criteria for AIH - n (%)‡			
< 6 points	36 (19.4)	3 (10.3)	0.237
6 points	56 (30.3)	13 (44.8)	0.119
> 6 points	93 (50.3)	13 (44.8)	0.586
Treatment - n (%)			
Steroids alone	11 (6)	2 (6.9)	0.842
Steroids + immunomodulator	118 (63.8)	20 (69)	0.588
Immunomodulator, steroids discontinuation successful	33 (17.8)	6 (20.7)	0.711
Treatment discontinuation successful	6 (3.2)	0 (0)	0.327
No treatment	10 (5.4)	1 (3.4)	0.657
No data	7 (3.8)	0 (0)	0.284
Response to treatment - n (%)§			
Biochemical remission	141 (83.9)	28 (100)	0.022
Incomplete remission	20 (11.9)	0 (0)	0.053
Treatment failure	5 (3)	0 (0)	0.357
No data	2 (1.2)	0 (0)	0.561

Relapses - n (%)§	35 (18.9)	2 (6.9)	0.111
Cirrhosis development during follow-up - n (%)‖	18 (14.6)	2 (16.6)	0.873
Liver transplantation - n (%)	12 (6.5)	1 (3.4)	0.522
Recurrence after transplantation- n (%)¶	2 (16.6)	1 (100)	0.057
Re-transplantation - n (%)	1 (8.3)	0 (0)	0.764
Death - n (%)	10 (5.4)	0 (0)	0.200

*IQR: interquartile range. ANA: antinuclear antibodies. SMA: anti-smooth muscle antibodies. AMA: anti-mitochondrial antibodies. * Ischemic heart disease, heart failure, peripheral vascular disease, stroke. † Calculated using patients with liver biopsy at diagnosis in each group. ‡ According to International Autoimmune Hepatitis Group (IAIHG) recommendations. § Calculated using patients who received treatment. ‖ Calculated using patients who were non-cirrhotic at AIH diagnosis. ¶ Calculated using patients underwent liver transplantation. Declaration of conflict of interest: None.*

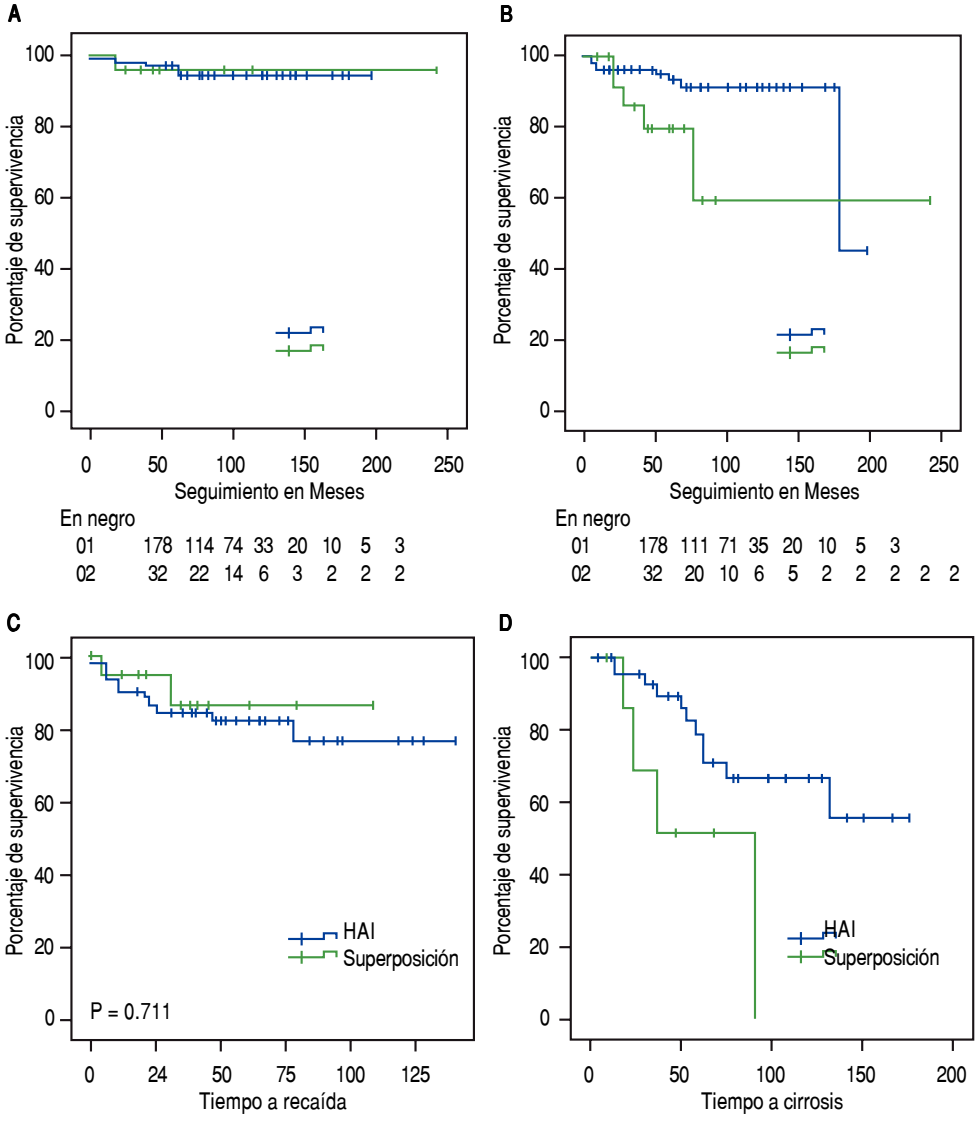

Figure 1 (P-99). *Differential survival in patients with AIH and overlap syndrome (Panel A), transplant-free survival in AIH and overlap syndrome. (G1: HAI, G2: overlap), relapse-free survival in those who achieved biochemical or partial remission (Panel C) and cirrhosis-free survival in those with F3 fibrosis or not reported (D).*

formed with the statistical software SPSS version 20.1 (SPSS Inc.). **Results.** Of 362 potential patients by ICD-10 diagnostic code for autoimmune hepatitis, after exclusions, 210 patients were included (195 women, mean age 48.5 years). Of these, 32 (15.2%) had AIH-PBC overlap syndrome. At diagnosis, no significant differences were found by demographic profile, positive autoantibodies (ANA, ASMA) except AMA (81.2% *vs.* 3.9%, P < 0.001) and histological grade of fibrosis. The most frequent clinical presentation were nonspecific symptoms in AIH-PBC and acute hepatitis in AIH. Although there were no significant

differences, AIH showed greater biochemical response to immunosuppressive management (87.3% *vs.* 74.2%, P = 0.061) and greater number of relapses in those who achieved partial or complete remission during treatment (12.4% *vs.* 7.6.3%; P = 0.727). Patients with AIH-PBC had greater progression to cirrhosis (22.2% *vs.* 13.1%, P = 0.038), even in those who achieved partial or complete biochemical remission without relapse, with greater indication of OLT (P = 0.009), but not retransplantation (P = 0.183); there were no differences in mortality. **Conclusions.** The AIH-PBC overlap syndrome constitutes a not insignificant proportion among those with AIH, with greater progression to cirrhosis, indication of liver transplantation and possibly retransplantation. This higher risk of adverse outcomes suggests that these patients must have a stricter follow-up and probably with follow up until confirmed histopathological remission (Figure 1).

P-100
DIFFERENTIAL CHARACTERISTICS IN DRUG-INDUCED AUTOIMMUNE HEPATITIS

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Background and aim. Drug-induced autoimmune hepatitis (DIAIH) is an adverse effect associated with several drugs that usually occurs acutely, with variable latency, and it may potentially be mortal. There are a few reports and studies about DIAIH. **Material and methods.** This is an analytical study of a retrospective cohort of patients, discriminated according to idiopathic or drug-induced etiology of AIH, followed up for a 7-year period until 31 December 2016 in a university center of Colombia. P value less than 0.05 considered statistically signifi-

Table 1 (P-100). Demographic, clinical, analytical characteristics to the diagnosis of AIH and DIAIH.

Characteristics	AIH (n = 178)	DIAIH (n = 12)	P Value
Age at diagnosis - median (IQR)	51 (36-59)	56 (26-56)	0.40
Sex, Females - n (%)	164 (92.1)	11(91.7)	0.95
Mixed race - n (%)	171 (96.1)	11 (91.7)	0.46
History of Autoimmunity - n (%)	59 (33.1%)	5(41.7%)	0.54
Clinical manifestations - n (%)			
No symptoms + liver tests altered	35 (19.7)	0	0.80
Nonspecific symptoms + liver tests altered - n (%)	37 (20.8)	2 (16.6)	0.72
Acute hepatitis - n (%)	62 (34.8)	10 (83.3)	< 0.001
Hepatic cirrhosis - n (%)	37 (20.8)	0 (0.0)	0.07
ANA			
Seronegative - n (%)	20 (11.2)	1 (8.3)	0.76
1:40 - n (%)	2 (1.1)	0 (0.0)	
≥ 1:80 - n (%)	145 (81.5)	11 (91.7)	0.37
SMA			
Seronegative - n (%)	103 (57.9)	10 (83.4)	0.08
1:40 - n (%)	16 (9.0)	0 (0.0)	0.27
≥ 1:80 - n (%)	45 (25.2)	2 (16.6)	0.50
AMA			
Seronegative - n (%)	159 (89.3)	12 (100.0)	0.23
Positive - n (%)	10 (5.6)	0 (0.0)	0.40
Liver fibrosis at diagnosis			
F0 - n (%)	11 (6.2)	1 (8.3)	0.76
F1-F2 - n (%)	35 (19.7)	4 (33.3)	0.25
F3-F4 - n (%)	97 (54.4)	4 (33.3)	0.15
Histological findings			
Compatible with AIH - n (%)	52 (29.2)	3 (25.0)	0.75
Typical of AIH - n (%)	126 (70.8)	9 (75.0)	0,75
Simplified score for AIH	n (%)	n (%)	
≥ 7 (AIH defined) - n (%)	104 (58.4)	8 (66.6)	0.57
6 (AIH probable) - n (%)	58 (32.6)	3 (25,0)	0.58
< 6 - n (%)	16 (9.0)	1 (8,3)	0.58

*† There are no data about state or degree of hepatic fibrosis in the biopsy report. ‡The diagnosis of these cases was given by AIH criteria and response to treatment. *Mann-Whitney U test was used to establish differences. IQR, interquartile range. METAVIR: F0, absence of fibrosis; F1, mild fibrosis; F2, moderate fibrosis; F3, severe fibrosis; F4, cirrhosis. AIH: autoimmune hepatitis. AMA: antimitochondrial antibodies. ANA: antinuclear antibodies. ASMA: anti-smooth muscle antibodies. DIAIH: drug-induced autoimmune hepatitis.*

Table 2 (P-100). Treatment, follow-up and outcomes in patients with AIH and DIAIH.

Characteristics	AIH (n = 178)	DIAIH (n = 12)	P value
Maintenance treatment			
None - n (%)	5 (2.8)	0 (0.0)	0.55
Only steroid - n (%)	9 (5.1)	0 (0.0)	0.78
Steroid and immunomodulator - n (%)	118 (66.3)	1 (8.3)	< 0.001
Only immunomodulator - n (%)	35 (19.7)	8 (66.6)	<0.001
Withdrawal of immunosuppression - n (%)	5 (2,8)	3 (25.0)	<0.001
Relapse - n (%)	32 (18.0)	0 (0.0)	0.10
Cirrhosis development during follow-up - n = 96*	12 (12.5)	0 (0.0)	0.19
Liver transplant - n (%)	10 (5.6)	0 (0.0)	0.40
Death during follow up - n (%)	5 (2.8)	0 (0.0)	0.55

** Patients with cirrhosis at diagnosis were excluded for the calculation.*

Table 1 (P-149). Characteristics of patients with sequential overlap syndrome (n = 10).

Initial diagnosis	Sequential diagnosis	Patients (n)	Time to SOS average years (range)	Age at diagnosis of SOS average	Biochemical characteristics at diagnostic of SOS				
					AST (x ULN) average	ALT (x ULN) average	ALP (x ULN) average	GGT (x ULN) average	Bilirubin (mg(dL) average
AIH	PSC	4	8.5	35 (23-40)	2.6	2.1	2.4	8.2	N
AIH	PBC	3	5.3	63 (53-74)	1.7	N	1.4	5.4	N
PSC	AIH	1	1.0	41	18	13	3.1	2.7	8.4
PBC	AIH	2	7.5	59.5 (56-63)	13	18	2.3	10.3	8.1

SOS: sequential overlap syndrome. AIH: autoinmune hepatitis. PSC: primary sclerosing cholangitis. PBC: primary biliary cholangitis. AST: aspartate aminotransferase. ALT: alanine aminotransferase. ALP: alkaline phosphatase. GGT: gamma glutamyl transferase. ULN: upper limit of normal.

cant. Calculations were performed with the SPSS statistical package versión 20.1 (SPSS Inc., Chicago, USA). **Results.** A total of 190 patients were selected for the analysis, 12 (6.3%) with DIAIH. The two main drugs related to DIAIH were nitrofurantoin, n = 8 (67%), and NSAID, in = 2 (17%), constituting 84% of the cases. There were no significant differences in seropositivity between AIH with DIAIH in antinuclear antibodies (ANA) and smooth muscle antibodies (SMA) antibodies, with 82.6% *vs.* 82.6% and 34% *vs.* 16%, respectively. The fibrosis stages were similar, except for the F4 stage, in a greater proportion in AIH. None of the patients with DIAIH had cirrhosis or developed it during follow-up, but it was present in 42.1% of the AIH cases at diagnosis (P = 0.003). Biochemical remission with management was higher in DIAIH but not significant (91.7% *vs.* 80.9%, P = 0.35). The definitive withdrawal of immunosuppression was successfully performed in 25% of those with DIAIH without relapses but was only possible in 2.8% in AIH (P < 0.001) with 32 cases of relapses. **Conclusion.** DIAIH constitutes a minor proportion of AIH. The clinical and histological characteristics may be similar; DIAIH patients have a greater chance of having treatment suspended with a low risk of relapse, progression to cirrhosis, or need for liver transplant.

P-149
SEQUENTIAL OVERLAP SYNDROME: CLINICAL CHARACTERISTICS OF 10 PATIENTS

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Introduction. The sequential overlap syndrome (SOS) is the consecutive presentation of two autoimmune chronic liver diseases, in most cases association of Autoimmune Hepatitis (AIH) and Primary Biliary Cholangitis (PBC) or Primary Sclerosing Cholangitis (PSC). It constitutes a clinical challenge, since there are no universally accepted diagnostic criteria. Given its low prevalence, only small series of cases have been reported. **Objectives.** Characterization of 10 patients with SOS diagnosis. **Material and methods.** Retrospective descriptive study of patients from 2 centers diagnosed with SOS, followed-up by one hepatologist. Review of clinical records and analysis of biochemical, serological, radiological and histological parameters and therapy used at the time of diagnosis of the initial and subsequent liver disease. **Results.** 10 patients had SOS, average age 49 years (23-74), 90% female. Five patients developed overlap between AIH and PSC, as well as AIH and PBC. In the group with overlap between AIH/PSC, 4 female patients initially pre-

sented AIH, developing PSC after 8.5 years average (average age 35 years). All patients had compatible MR cholangiography, biopsy with chronic cholangitis, and one case developed ulcerative colitis. Only 1 male patient initially presented PSC and subsequently AIH, presenting high ANA titers and the appearance of ASMA. The 5 patients with AIH/PBC overlap were female. Three patients were initially diagnosed with AIH, developing PBC after 5.2 years (average age 63 years). Only 1 had positive AMA. Two patients with initial PBC subsequently developed AIH, after 7.5 years average. The 10 patients received combined treatment with immunosuppressants and UDCA at the time of diagnosis of SOS. **Conclusion.** SOS is a rare entity that should be suspected when a patient with an autoimmune liver disease does not follow the normal clinical phenotype and expected response to therapy. Its adequate diagnosis modifies the treatment and prognosis.

02 BASIC STUDIES

P-15
IMMUNE RESPONSE IN THE PATHOGENESIS OF CHC: T CELL POPULATIONS AND CYTOKINE MILIEU IN LIVER AND PERIPHERAL BLOOD

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Introduction. In chronic hepatitis C (CHC) the immune system is involved in liver damage; but, the role of each immune cell is unknown. We aimed to evaluate T cell populations and cytokine milieu in liver and peripheral blood (PB) to elucidate the immune system role in CHC liver disease. **Material and methods.** Liver biopsies and concomitant PB samples from 48 untreated adult CHC patients were analyzed. CTL (CD8), Th (CD4), Th17 (IL17A/CD4-IL17A), Treg (Foxp3/CD4-CD25hi-Foxp3) and Th1 (Tbet/CD4-IFNγ) cell frequencies were evaluated by immunohistochemistry on formalin-fixed biopsies and by flow cytometry in PB. TGFβ, IFNγ, IL6, IL1β, IL8, IL10, IL23, IL21 levels were evaluated by RT-qPCR in fresh liver and by CBA in plasma. PB samples from uninfected donors were included. Results were related to hepatitis and fibrosis severity. **Results.** Liver infiltrates showed Th predominance, high Treg and Th1 but low Th17 frequency. Th17 cells and Th17/Treg ratio showed fibrosis association (both $p = 0.04$). TGFβ ($p < 0.05$, $r = 0.49$), IL8 ($p < 0.01$; $r = 0.49$) and IL6 ($p < 0.05$, $r = -0.43$) displayed correlations with Th17 frequency. While TGFβ, IL23, IL1β were associated with hepatitis severity (all $p < 0.05$), IL8 was associated with advanced fibrosis ($p = 0.004$). IL10 correlated to IL6, IL21 and IL23 (all $p < 0.05$; $r = 0.43$, $r = 0.66$, $r = 0.39$, respectively) and was higher in severe hepatitis cases. The PB lymphocyte profile in CHC patients was similar to donors, but cytokines pattern showed higher levels in patients, being IL6 and TGFβ significantly elevated ($p = 0.03$; $p = 0.04$). **Conclusion.** The liver immune microenvironment in CHC depicted a complex cytokine milieu that allows the Th17 and Treg interplay. Although Treg was not directly involved in liver damage, high IL10 levels might reflect a different Treg activation status throughout disease progression. Th17 and IL8 might have a key role in fibrogenesis. While CHC peripheral lymphocyte frequency showed no alterations, the cytokine profile delineated an activated scenario.

P-132
MOLECULAR GENETIC ANALYSIS OF MARKER RS738409 GENE PNPLA3 IN THE YAKUT POPULATION

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Introduction. Non-alcoholic fatty liver disease (NAFLD) is an emerging health concern, with increasing prevalence worldwide. Recently, a non-synonymous genetic variation (rs738409) in the human patatin-like phospholipase domain-containing 3 gene (PNPLA3), was found to be associated with NAFLD among Hispanics, African Americans, and European Americans. Studies have shown that the G allele (risk allele) of rs738409 in PNPLA3 gene was associated with increased propensity of steatosis and severe fibrosis. **Objectives.** In this study, we investigated the distribution of PNPLA3 genotypes among Yakut. Understanding the prevalence of PNPLA3 genetic variation among various ethnic populations could provide useful information for the improvement of care of patients at risk for developing hepatic steatosis and advanced liver damage. **Material and methods.** 179 samples, a population cohort of the Yakuts, were analyzed. Study participants were enrolled from YSC CMP hospital-Yakutsk City. The study was approved by YSC CMP Ethics Committee. All study participants gave written informed consent. Мы определили варианты SNP (rs738409) в гене PNPLA3. **Results.** As a result of genotyping of the population sample of the Yakuts for the PNPLA3 gene, the prevalence of the GG genotype (61.5%) was revealed. The allele G frequency was 76.8%. The distribution of genotypes of polymorphism rs738409 was in the Hardy-Weinberg equilibrium in the sample studied ($p > 0.05$). **Conclusions.** The high frequency of G allele in Yakuts (76.8%) is probably associated with a high incidence of liver disease and severity (severe fibrosis) among the Yakuts. It is necessary to further study the PNPLA3 gene in the Yakuts with NAFLD.

03 CIRRHOSIS

P-04
A DIFFERENT GUT MICROBIOME LINKED TO INFLAMMATION FOUND IN CIRRHOTIC PATIENTS WITH AND WITHOUT HEPATOCELLULAR CARCINOMA

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Introduction. Increasing interest has been focused during the last years regarding microbiome and human diseases including cirrhosis, alcoholic liver disease, fatty liver and fibrosis progression. Changes in gut microbiome have been observed with progression of liver disease including a reduced abundance of taxa considered benign, such as *Lachnospiraceae, Ruminococcaceae* and *Clostridialies* and a higher abundance of non-benefitial taxa such as *Enterobacteriaceae* and *Bacteriodaceae*. A renewed novel research has focused on microbiome and cancer development. However, no specific microbiome in patients with hepatocellular carcinoma (HCC) has been reported to date. **Aims.** We sought to compare the gut microbiome found in cirrhotic patients with and without HCC, in order to try to identify a specific gut microbiome profile among cirrhotic patients with HCC. **Material and methods.** This observational case-control study was nested on a prospective longitudinal cohort of patients with cirrhosis who were followed-up in our Liver Unit at Austral University Hospital, School of Medicine, in colaboration with HERITAS (Rosario), CONICET and the National Academy of Medicine from Argentina. This study was carried out between December 2015 and October 2016 in accordance with international recommendations for observational studies. From 407 patients with Child Pugh A/B cirrhosis prospectively followed, 25 with HCC (cases) were matched with 25 without HCC (wo-HCC) in a 1:1 ratio according to age, gender, etiology, Child Pugh and severity of portal hypertension. In addition results were also compared with 25 healthy subjects. Plasma cytokines were quantified including interleukin-6 (IL-6) and tumor necrosis factor α (TNF-α). Faecal stool samples were sequenced for the V3-V4 region of the microbial 16S rRNA (Illumina MiSeq Platform). **Results.** We found a differential abundance in family members of *Firmicutes* with a 3-fold increased of *Erysipelotrichaceae* and a 5-fold decrease in family *Leuconostocaceae* in HCC when compared to wo-HCC controls. Genus Fusobacterium was found 5-fold decreased in HCC *vs.* wo-HCC. The ratio bacteriodes/*prevotella* was increased in HCC. Three operational taxonomic units (OTUs), genus Odoribacter and Butyricimonas were more abundant in HCC, whereas a decreased abundace in *Lachnospiraceae* family genus Dorea was observed in HCC patients. This pattern has been previously associated with an inflammatory milieu with a putative increased activation of NOD-like receptor signalling pathways. **Conclusions.** A pattern of gut microbiome linked to inflammation was observed in patients with HCC, opening the discussion whether or not microbiota has a physiopathologic role. The differential abundance in 3 specific OTUs might be further explored as a new tumor biomarker.

P-10
THE IMPACT OF INFECTIONS ON THE MORTALITY OF HOSPITALIZED PATIENTS WITH LIVER CIRRHOSIS

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Introduction. Bacterial infections are common complications in patients with cirrhosis and are associated with a poor prognosis. However, there are no studies that analyze the impact of the different infectious complications on the mortality of patients with cirrhosis. **Objective.** To evaluate the impact of infectious complications in the short-term mortality of hospitalized patients with cirrhosis. **Material and methods.** We performed a case-control study in adult patients from both sexes with cirrhosis who had been hospitalized from 2014 to 2017 and with a follow-up for at least one year. We recorded demographic data, prognostic scales, infectious complications and mortality at 30, 90 and 365 days. Demographic data are presented as numbers with percentages and medians and inter-quartile ranges as appropriate. The primary outcome was mortality. For the survival analysis, hazard ratios were calculated with 95% confidence intervals by Cox-regression in univariate and multivariate models. For the comparison between the groups the χ^2 test, Fisher's exact test and Mann-Whitney U test were used as appropriate. **Results.** We included 500 patients. The median age was 58 years (47-65), the predominant sex was woman (52%) and the most common infections were urinary tract infections (UTI) (35%), pneumonias (28.2%) and spontaneous bacterial peritonitis (SBP) (18%). In the univariate analysis, infections in general, SBP, pneumonia and central nervous system (CNS) infections had an increased mortality at the three follow up periods, but in the multivariate analysis with the prognostic scales, only pneumonia (HR 2.03, CI 95% [1.06-3.86]) and CNS infections (HR 4.84, CI 95% [1.38-16.93]) remained with increased mortality (Table 1). **Conclusions.** Some infectious complications as pneumonia and CNS infections independently increase short-term mortality in hospitalized patients with cirrhosis. **Conflict of interest statement.** None to report.

Table 1 (P-10). Univariate and multivariate analysis of the impact of infectious complications in the mortality of hospitalized patients with cirrhosis at 30, 90 and 365 days.

Mortality in hospitalized patients with cirrhosis

Variable	30 days				90 days				365 days			
	Univariate		Multivariate		Univariate		Multivariate		Univariate		Multivariate	
	HR (CI 95%)	p	HR (CI 95%)	p	HR (CI 95%)	p	HR (CI 95%)	p	HR (CI 95%)	p	HR (CI 95%)	p
Child-Pugh C	5.27 (3.33-8.36)	< 0.001			6.12 (4.04-9.27)	< 0.001			6.22 (4.33-8.94)	< 0.001		
MELD >15	2.19 (0.87-5.52)	0.096			2.14 (0.95-4.78)	0.064			2.70 (1.28-5.69)	0.009		
Infections	3.24 (1.92-5.46)	< 0.001	0.94 (0.30-2.96)	0.924	4.25 (2.58-7.01)	< 0.001	1.38 (0.45-4.17)	0.566	5.21 (3.26-8.34)	< 0.001	1.70 (0.58-4.99)	0.332
Bacterial	3.03	< 0.001	0.81	0.665	3.43	< 0.001	0.69	0.363	4.35	< 0.001	0.91)	0.818
infections	(1.85-4.95)		(0.33-2.02)		(2.19-5.35)		(0.31-1.52)		(2.85-6.62)		(0.43-1.92	
Spontaneous	1.72	0.017	1.17	0.715	1.67	0.012	1.15	0.718	1.67	0.005	1.01	0.976
Bacterial peritonitis	(1.10-2.70)		(0.49-2.77)		(1.12-2.49)		(0.53-2.47)		(1.16-2.39)		(0.51-2.00)	
Urinary tract	1.14) (0.76-1.71	0.515			1.29 (0.91-1.85)	0.148			1.40 (1.02-1.92)	0.034	0.98 (0.52-1.83)	0.951
infections												
Pneumonia	3.54 (2.38-5.27)	<0.001	1.57 (0.69-3.61)	0.280	4.30 (3.01-6.12)	< 0.001	2.06 (0.99-4.28)	0.053	4.77 (3.47-6.54)	< 0.001	2.03 (1.06-3.86)	0.031
Abdominal sepsis	1.12 (0.52-2.42)	0.768			1.11 (0.56-2.19)	0.751			0.96 (0.50-1.83)	0.914		
Soft tissue	0.84	0.712			0.77)	0.547			1.29)	0.395		
infections	(0.34-2.07)				(0.34-1.76				(0.71-2.32			
Central nervous system infections	3.57 (1.31-9.71)	0.013	4.84 (1.38-16.93)	0.014	3.13 (1.15-8.50)	0.025	4.39 (1.28-15.04)	0.019	2.73 (1.01-7.40)	0.047	4.01 (1.19-13.57)	0.025
Upper respiratory tract infections	0.32 (0.04-2.33)	0.265			0.24 (0.03-1.77)	0.164			0.78 (0.28-2.10)	0.625		
Osteomyelitis	2.41 (0.33-17.33)	0.380			2.04 (0.28-14.64)	0.476			4.07 (1.00-16.45)	0.049		
Bacteremia	2.32 (1.55-3.47)	< 0.001	0.75 (0.29-1.93)	0.555	2.49) (1.74-3.55	< 0.001	0.77 (0.34-1.76)	0.542	2.80 (2.04-3.84)	< 0.001	0.91 (0.45-1.82)	0.804
Other	0.48 (0.19-1.18)	0.111			0.59 (0.29-1.21)	0.152			0.70 (0.39-1.26)	0.240		

P-11
EARLY PREDICTORS OF AKI DEVELOPMENT/ PROGRESSION IN PATIENTS WITH CIRRHOSIS AND ASCITES ADMITTED WITH A BACTERIAL INFECTION

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Introduction. Acute kidney injury (AKI) is a common complication of bacterial infections in patients with cirrhosis and ascites. AKI is associated with high mortality, especially in patients in whom AKI p rogresses. **Objective.** Identifying factors (including urinary NGAL) that predict development/progression of AKI in patients admitted with bacterial infection. **Material and methods.** Multicenter study including adult patients with cirrhosis and ascites admitted with a bacterial infection between June 2013 and April 2017. Baseline characteristics were compared between patients who developed (*vs.* those who did not develop) the outcome: AKI development in those without AKI on admission; progression of AKI in those with AKI on admission. **Results.** 179 patients were included (72 without and 107 with AKI at admission), median age was 57 years, 70% were male and spontaneous bacterial peritonitis was the most frequent infection (53%). Of those without AKI, 25 (35%) developed it during admission. Independent predictors of AKI development were female gender (OR: 3.50 [1.19-10.34], p = 0.023) and overt hepatic encephalopathy (OHE) (OR: 4.25 [1.29-14.04], p = 0.018). Of those with AKI on admission, it progressed in 39 (36%). The only independent predictor of AKI progression was urinary NGAL (OR 1.46 [1.03-2.07], p = 0.035). Although female gender and Child were associated with AKI progression on univariate analysis, they were of borderline significance in the multivariate model (p = 0.0502 and p = 0.059 respectively). **Conclusions.** Patients with cirrhosis and ascites admitted with an infection and OHE are at increased risk of AKI development, which might reflect some degree of renal dysfunction that does not yet fulfill AKI criteria. These patients should have renal function closely monitored. Females seem to be more prone to AKI development and progression. High urinary NGAL levels appear to identify patients with increased risk of AKI progression that should be prioritized for timely treatment of AKI. **Conflicts of interest.** This study received grants from Sao Paulo Research Foundation (FAPESP). Ciarleglio M, Yanhong D and Garcia-Tsao G are funded from Yale Liver Center NIH P30 DK34989.

Table 1 (P-11).

	AKI development			AKI Progression		
	Yes (n = 25)	No (n = 47)	p	Yes (n = 39)	No (n = 68)	p
Age	53.0 (51.0-60.0)	56.0 (44.0-63.0)	0.75	59.0 (53.0-63.0)	58.5 (49.0-65.5)	0.80
Gender (female)	**13 (52%)**	**12 (26%)**	**0.025**	**14 (36%)**	**14 (21%)**	**0.08**
Overt hepatic encephalopathy	**10 (40%)**	**7 (15%)**	**0.017**	16 (41%)	22 (32%)	0.37
Serum creatinine	0.8 (0.7-0.9)	0.8 (0.7-1.0)	0.97	2.2 (1.8-3.0)	1.8 (1.5-2.3)	0.014*
Child						
- A	0 (0%)	1 (2%)	0.87	**0 (0%)**	**0 (0%)**	**0.039**
- B	10 (40%)	21 (45%)		**6 (15%)**	**23 (34%)**	
- C	15 (60%)	25 (53%)		**33 (85%)**	**45 (66%)**	
MELD	16.0 (14.0-19.0)	15.0 (13.0-21.0)	0.92	27.0 (23.0-30.0)	24.5 (20.0-30.0)	0.06
Urinary NGAL, µg/L	94.5 (49.0-366.8)	76.3 (51.3-192.4)	0.34	**333.0 (182.9-1158.3)**	**163.1 (102.1-435.7)**	**0.008**

*Variables in bold were included in multivariate models. *Serum creatinine was not included because it correlated with all other significant variables.*

P-17
GOOD PERFORMANCE OF LIVER FIBROSIS ASSESSMENT WITH A NEW DEVICE FROM TRANSIENT ELASTOGRAPHY

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Introduction. Transient elastography (TE) is a non-invasive method that quantifies liver fibrosis (LF), being liver biopsy (LB) the gold standard. **Objective.** To evaluate the diagnostic performance of TE against LB in LF assessment in patients with chronic liver disease (CLD). **Material and methods.** Diagnostic test study. CLD patients with LB performed from August 2016 to November 2017 were enrolled (n = 39). TE was performed with Fibrotouch®HISKY/FT1000 device by a single operator. 69% were women, age average 57 ± 11 years old, time between TE and LB was 4 ± 2 months; GPT 76 ± 58 IU/L; CLD etiologies: Autoimmune Hepatitis 44%, Non-alcoholic steatohepatitis 28%, Chronic cholestasia 15%, other etiologies 13%. LF assessed by LB was classified according to METAVIR. TE results were classified according to the presence of mild or no LF (F0 or F0/F1) and in advanced LF (F3, F3/F4 or F4). Statistical analysis was done with ROC curve and area under curve (AUC), sensitivity (Se), specificity (Sp), positive predictive value (PPV), negative predictive value (NPV) were calculated. **Results.** TE showed an AUC = 0.77 for mild or no LF (F0 or F1 in LB), Se: 57.14%; Sp: 96%, PPV 100%, NPV 88.89%. On the other hand, for the diagnosis of advanced LF (F3 or F4 in LB), TE showed an AUC = 0.92, Se: 100%, Sp: 83.33%, PPV: 85.71%; NPV: 100%. **Conclusion.** TE with a new device, has a good diagnostic performance to discard LF, as well as to confirm advanced LF comparate with LB. Therefore, in patients with a known etiology, TE could substitute the LB for follow-up of LF.

P-18
EVALUATION OF CXCL-8 AND IL-6 IN PATIENTS WITH CHRONIC LIVER DISEASE

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Background. Cytokines play a critical role in cell communication and activation, the liver is a source of cytokines and chemokines, are key molecules that participate in the development of most liver diseases. There is evidence about the participation of neutrophils that are recruited by CXCL-8 in acute liver diseases, and IL-6 has a hepatoprotector effect in alcoholic liver disease (ALD), however, the participation of CXCL-8 and IL-6 in other liver diseases still not clear. **Objective.** To evaluate the concentration of CXCL-8 and IL-6 in alcoholic subjects, alcoholic liver cirrhotic patients, chronic hepatitis C and control subjects. **Material and methods.** We included alcoholic patients that were seen at the Liver Clinic of the Hospital General de Mexico. Alcoholism was defined according to the WHO criteria (70 g/day for men and 50 g/day for women over the last 5 years) and the alcoholic patients were classified as those without cirrhosis of the liver (OH) and those with liver cirrhosis (COH). A group of patients with chronic hepatitis C (CHC) and a control group (CT) were also included. The CT subjects consumed 10 g/day of alcohol and had negative viral serology. CXCL-8 was determined in serum through Luminex technology (Biorad). The Mann-Whitney U test was employed in the statistical analysis. **Results.** 81 alcoholic patients were included: 19 without cirrhosis of the liver (OH) and 62 with cirrhosis of the liver (COH). They were compared with 108 CHC patients and 100 CT subjects (Table 1). **Conclusion.** CXCL-8 concentration in alcoholics with and without COH was 3 times higher compared with the CHC patients and 15 times higher compared with the control subjects. While the concentration of IL-6 in alcoholics was 2 times higher compared to controls and in COH patients was 100 times compared with OH and CHC patients. Our results showed that CXCL-8 and IL-6 participate actively maintaining the inflammatory process even in liver cirrhosis. This work has been partially funded by CONACYT: SALUD-2016-272579.

P-21
EVOLUTION OF DIAGNOSTIC CRITERIA FOR ACUTE KIDNEY INJURY IN DECOMPENSATED CIRRHOTIC PATIENTS: PROSPECTIVE STUDY IN A TERTIARY UNIVERSITY HOSPITAL

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Introduction. Acute kidney injury (AKI) was traditionally diagnosed as serum creatinine (sCr) ≥ 1.5 mg/dL. Recently, changes in AKI diagnostic criteria have been proposed (ICA-AKI criteria). **Objectives.** To evaluate the prevalence of AKI in cirrhotics; to evaluate the agreement between traditional and ICA-AKI criteria; to assess its etiologies, risk factors, responses to treatment, progression for liver transplantation and mortality. **Material and methods.** Prospective cohort study in cirrhotic patients non-electively admitted from October 2016 to August 2017. Kappa coefficient was used to evaluate the agreement between the two AKI criteria. The total number of hospitalizations was evaluated using the PWP statistical model for recurring events; p value < 0.05 was considered significant. **Results.** 154 admissions of 75 patients were included. The mean age was 56.49 ± 9.65 years-old and 73 patients had decompensated cirrhosis (98.6%), with a mean MELD 18.15. Among the hospitalizations, 89 (57.79%) met ICA-AKI criteria. There was

substantial agreement between both AKI classifications (Kappa 0.7293). The main etiology of AKI was pre-renal (69.66%), followed by renal (26.96%) and hepatorenal syndrome (10.11%). Risk factors for ICA-AKI in univariate analysis were a higher MELD, infection, lower serum sodium and diuretics. In multivariate analysis, MELD (p = 0.0188) and furosemide (p = 0.0014) were associated to ICA-AKI. In-hospital mortality in univariate analysis was associated with sCr ≥ 1.5 mg/dL (p = 0.0373), MELD (p = 0.0296), bilirubin (p = 0.0064), shock (p = 0.0003) and peak stage3 ICA-AKI (p = 0.0221), while in multivariate analysis, peak stage3 ICA-AKI (p = 0.0252, RR: 10.499,95%CI: 1.339-82.335). Among hospitalizations with AKI, death was significantly associated with peak stage3 ICA-AKI, non-response to treatment and -dialysis. Stage1A-AKI had a better prognosis than stage ≥ 1B-AKI. **Conclusions.** AKI strongly impacted mortality. ICA-AKI stage3 led to a 10.49 times higher risk of death. Substantial agreement between AKI definitions was observed, and sCr > 1.5 mg/dL still remained an ominous finding.

P-23
RENAL DYSFUNCTION IN PATIENTS HOSPITALIZED WITH CIRRHOSIS: A STUDY OF RETROSPECTIVE COHORTE

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Introduction. Renal dysfunction in cirrhotic patients increases the probability of death during hospitalization. Predictors of mortality were examined, particularly the increase in serum creatinine as well as other causes of decompensation. **Objectives.** To know the clinical and epidemiological characteristics of patients with liver cirrhosis of the Eugenio Espejo Hospital. To assess the impact of renal dysfunction in hospitalized cirrhotic patients. **Material and methods.** Observational analytical study of a retrospective cohort. We analyzed 119 cirrhotic patients hospitalized from January 1, 2017 to March 31, 2018. The information was collected from the virtual medical records, obtaining epidemiological data, causes of hospital admission, presence of diseases associated with renal dysfunction such as arterial Hypertension and Diabetes Mellitus. In addition to imaging and laboratory reports. Serum creatinine measurements were standardized in the hospital laboratory and the kidney function scale AKIN (Acute Kidney Injury Network) was used. **Results.** A total of 119 patients with liver cirrhosis were included, from which 64 (53.8%) were men, with an average age of 60.5 ± 12.8 years. The cryptogenic etiology predominated with 53% and from this group, 55.56% were female. Stage I acute kidney dysfunction was 10.93%, stage II was 2.52%, and stage III was 2.52%. 8.4% of the patients had pre-established chronic kidney disease. There were 11 deaths with a higher percentage in the group of patients with acute renal injury (AKI) 5.88% *vs.* 3.36% in patients without AKI (< 0.01). **Conclusion.** Mortality in patients with liver cirrhosis and acute renal injury was more frequent than in the group without renal dysfunction.

P-24
RISK FACTORS TO PRESENT A FIRST EPISODE OF SPONTANEOUS BACTERIAL PERITONITIS (SPB) IN THE HEPATOPATH PATIENTS ENTERED IN THE "DR. SALVADOR B. GAUTIER"

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Introduction. Since its description in 1964, a large number of studies, guidelines and national and international consensus have emerged that have made a great advance in the diagnosis and treatment of this disease and have significantly changed its prognosis.**Objectives.** This study was carried out with the objective of identifying the predictors or risk factors for the appearance of a first episode of SBP in hepatopath patients with ascites. **Material and methods.** Is an observational, cross-sectional, descriptive study of prospective follow-up. From August 2013 to January 2014, we collected a total of 30 hepatopath patients with ascites who presented a first episode of SBP. **Results.** 16 variables were obtained at the time of admission (including total ascitic fluid protein concentrations, serum bilirubin, severity of liver disease by the Child Pugh scale, serum creatinine, transaminase levels, prothrombin time, history of use of PPI, among others), in relation to its value in the prediction of development in a first episode of SPB. In the univariate analysis, four variables reached statistical significance (P < 0.05) as predictive factors for the development of the first episode of SBP. These were serum albumin less than 2.8 g/dL, advanced liver disease, ascitic fluid total protein concentration < 1.5 g/dL and elevated serum creatinine levels. **Conclusions.** The probability of a first episode of SBP is significantly influenced by the concentration of ascitic fluid proteins and the severity of liver disease.

P-25
UTILITY OF REAGENTS STRIPS FOR THE EARLY DIAGNOSIS OF SPONTANEOUS BACTERIAL PERITONITIS IN CIRRHOTIC PATIENTS WITH ASCITIS

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Introduction. Spontaneous bacterial peritonitis (SBP) requires an early diagnosis for the initiation of antibiotic therapy. The diagnosis is based on cytochemical examination of ascitic fluid, which takes hours to perform and has limited availability 24 h a day, especially in first level hospitals and in rural areas. **Objective.** Evaluate the utility and diagnostic accuracy of Multistix 10SG reagent strip for diagnosis of SBP in cirrhotic patients with ascites admitted in Cardioinfantil Foundation –Cardiology Institute. **Material and methods.** Diagnostic test study in cirrhotic patients with ascites. The leucocyte count of ascitic fluid was determined by colorimetric scale of Multistix 10SG reagent strips and was compared with the gold standard for the diagnosis

of SBP (polymorphonuclear (PMN) ≥ 250 cells/mm^3). **Results.** Of 106 patients with ascites (51.8% men, mean age 59 years) 16 patients were diagnosed with SBP. The sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio and negative likelihood ratio taking grade ++ as cut off were 93.7%, 95.5%, 78.9%, 98%, 21 and 0.06, respectively. **Conclusion.** Multistix 10SG reagent strip has a high sensitivity and specificity for the diagnosis of PBE compared to PMN count method. It is an inexpensive and easy technique, requires minimal time for interpretation and is available, even in remote areas. This test may be useful for the diagnosis of SBP in country like Colombia.

P-29
SURVIVAL AND CUMULATIVE INCIDENCE OF COMPLICATIONS IN CUBAN PATIENTS WITH COMPENSATED LIVER CIRRHOSIS: A PROSPECTIVE LONG-TERM STUDY

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Introduction. Natural history of subjects with compensated liver cirrhosis from Latin-American and Caribbean's countries has been deficiently study. **Objectives.** Assess liver- related complications and survival in Cuban patients with compensated liver cirrhosis according to D'Amico stage prospectively followed for 10 years. **Material and methods.** Among 424 subjects recruited from a tertiary referral care center in Havana, Cuba (2007 to 2016), 256 were into stage 1(absence of esophageal varices] and 168 in stage 2 (presence of esophageal varices). The cumulative probability for survival and clinical outcomes [as defined by the first occurrence of at least one of conditions: ascites, variceal hemorrhage, hepatic encephalopathy or hepatocelular carcinoma (HCC)] were analyzed by the standard Kaplan-Meier method (95% CI), differences between stages were compared using log-rank test. Univariate and multivariable analysis were done for prognoses factors. **Results.** Over a median of 288 (16-272) weeks, liver-related outcomes occurred in 152 (35.8%) patients, higher in stage 2 (50.6%)/stage 1(26.2%) ($p < 0.001$). The cumulative 6-year incidence of ascites, variceal haemorrhage, encephalopathy and hepatocelular carcinoma was 60.3%, 45.3%, 16.7% and 12.5%. The overall cumulative 10-year incidence of gastroesophageal variceal haemorrhage in stage 2 was 29.8% *vs.* 5.5% in stage 1 ($p < 0.001$). The viral cause (HCV/HBV) was related to the development of liver-related outcomes [HR: 1.7 (95% CI: 1,2-2,4)], higher in HCV. The overall survival at 3, 5 and 10 years were 92.9%, 88.5% and 77.7% and they were not different according to the D'Amico stage stratification (Log Rank [Mantel - Cox] $p = 0.12$). Prothrombin time (PT) and albumin were associated with survival ($p < 0.001$). **Conclusion.** Stage 2 compensated cirrhotics had significantly higher complications, mainly variceal haemorrhage. Hepatic dysfunction as indicated by low albumin and prolonged PT were the only predictors of mortality.

P-31
HIGH INCIDENCE OF SPONTANEOUS BACTERIAL PERITONITIS RECURRENCE IN PATIENTS UNDER SECONDARY PROPHYLAXIS WITH NORFLOXACIN

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Background. Few studies evaluated spontaneous bacterial peritonitis (SBP) recurrence in patients receiving secondary antibiotic prophylaxis, all performed more than 20 years ago. Changes in the bacteriology of SBP over the last years might have a negative effect on secondary prophylaxis. **Aim.** To estimate the incidence of SBP recurrence in patients with cirrhosis receiving secondary prophylaxis with norfloxacin, and to explore factors associated with SBP recurrence. **Material and methods.** Retrospective cohort study of patients with cirrhosis receiving norfloxacin for secondary prophylaxis of SBP from (March/2003-March/2016). Secondary prophylaxis had to be started no later than one week after the resolution of the first SBP. Patients with a history of transplantation or advanced hepatocellular carcinoma were excluded. Patients who died or were transplanted during SBP treatment (before secondary prophylaxis was started) were excluded. Follow up consisted on 365 days since secondary prophylaxis started. SBP recurrence was defined as any episode of SBP diagnosed during follow-up. **Results.** The characteristics of the 115 patients included at the time of their first SBP is shown in the table. Overall, 70.96% (95% CI 51.96%-85.77%) had a history of quinolone-resistant SBP and 12.90% (95% CI 3.63%-29.83%) of multiresistant SBP. The cumulative incidence of SBP recurrence was 28.53% (95%CI 20.15%-37.45%) at 365 days. In the bivariate analyses (table), the only variable that significantly differed among patients with and without SPB recurrence was gender: male patients presented a crude sHR of SBP recurrence of 2.52 (95%CI 1.07-5.91, $p = 0.034$). **Conclusions.** Almost one third of the patients with cirrhosis under secondary prophylaxis with norfloxacin presented SBP recurrence during the first year, which is higher than previously reported. More studies are needed to redefine the benefits and disadvantages of universal secondary prophylaxis.

Table 1 (P-31).

Variable	Without recurrence (N = 85)	With recurrence (N = 30)	P1
Male gender, num (%)	44 (52)	23 (77)	0.035
Age-years	58 ± 14	55 ± 14	0.626
Cirrhosis etiology, num (%)			
Viral hepatitis	29 (34)	8 (27)	
Alcohol	16 (19)	10 (33)	
Non-alcoholic steatohepatitis	4 (5)	3 (10)	0.321
Cryptogenic	11 (13)	2 (7)	
Autoimmune hepatitis	10 (12)	5 (17)	
Primary biliary cholangitis	12 (14)	1 (3)	
Other	3 (3)	1 (3)	
Diabetes, num (%)	8 (9)	6 (20)	0.145
Child-Pugh score	10.49 ± 1.76	10.73 ± 1.13	0.653
MELD score	20.04 ± 6.63	21.10 ± 4.68	0.369
Ascitic fluid proteins- mg/dL[2]	1.25 ± 0.69	1.30 ± 0.84	0.749
Leukocyte count[2] (x103/mm^3)	8.36 ± 4.06	8.36 ± 5.41	0.915
Creatinine[2] (mg/dL)	1.20 ± 0.68	1.08 ± 0.33	0,265
Total bilirubin[2] (mg/dL)	6.54 ± 6.79	5.81 ± 4.47	0.518
Albumin[2] (g/dL)	2.43 ± 0.43	2.57 ± 0.49	0.233
International Normalized Ratio[2]	1.86 ± 0.66	1,90 ± 0.44	0.742
Sodium[2] (mEq/L)	131 ± 6	131 ± 5	0.784
Ascitic fluid proteins-mg/dL[2]	1.25 ± 0.69	1.30 ± 0.84	0.749
Systemic inflammatory response syndrome[3], num (%)	33 (48)	17 (63)	0.256
Acute-on-chronic liver failure[3], num (%)	18 (26)	3 (11)	0.114
Culture-positive SBP[4], num (%)	23 (32)	8 (29)	0.772
Antibiotic susceptibility (n = 31)[5], num (%)			
Quinolone-resistant	18 (78)	4 (50)	0.154
Multiresistant	3 (13)	1 (12)	0.994
Nosocomial or healthcare-related infection[6]	31 (43)	13 (43)	0.981
Adequate initial antibiotic treatment[5] (n = 31)	20 (87)	7 (87)	0.851
Concomitant medication, num (%)			
Rifaximin	32 (37)	12 (40)	0.965
Beta-blockers	52 (61)	16 (53)	0.557
Proton-pump inhibitors	71 (84)	24 (80)	0.370

All variables were collected at the time of the first SBP episode, except for concomitant medications which were collected during the follow up. [1] Hypothesis testing was performed with bivariate Fine and Gray models. [2] Available in 107 patients. [3] Available in 100 patients. [4] Available in 98 patients. [5] Data only for patients with culture positive SBP (n = 31). [6] Available in 98 patients.

P-32
THE ETIOLOGY OF LIVER DISEASE AS A RISK FACTOR IN THE DEVELOPMENT OF FIBROSIS: A STUDY WITH TRANSITIONAL ELASTOGRAPHY

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Introduction. The chronic liver disease is increasingly prevalent worldwide, the etiology includes it is diverse. The development and progression of hepatic fibrosis, although multifactorial and not linear, is not similar in the different causes of liver disease. **Objective.** Determine for each etiology the risk of developing advanced fibrosis, measured with transitional elastography (TE). **Material and methods.** TE was performed in patients with a risk factor for the development of hepatic fibrosis in the following groups: alcohol liver disease, autoimmune disease, non-alcoholic fatty liver, hepatitis C virus, cholestatic diseases. Statistic analysis. Comparisons were made between the different etiologies to evaluate differences in each of them, between the degrees of fibrosis and steatosis independently. Binary logistic regressions were carried out to determine which etiology has the highest risk of developing grade F4 fibrosis and grade S3 steatosis. A level of alpha significance less than 0.05 was considered. **Results.** Included 446 patients (61% women) with 52 ± 10.9 years. 47.8% (n = 213) NASH, 22.9% (n = 102) HCV, 18.4% (n = 82) alcohol, 5.4% (n = 24) cholestatic and 5.6% (n = 25) autoimmune. The highest risk for grade F4 fibrosis was higher for NASH with an OR = 2181 (p = 0.001); protector for HCV

OR = 0.593 (p = 0.021). For alcoholic, cholestatic and autoimmune fibrosis, no significant predictors were found for F4. The predictors for S3 were for NASH OR = 2.942 (p = 0.001); for alcoholic OR = 2,917 (p = 0.003); for HCV, cholestatic and autoimmune no significant predictors were found for S3. **Conclusions.** The risk of developing advanced fibrosis is twice as high in NASH as in any other etiology. HCV infection presents a slower risk of the development of fibrosis. Regarding steatosis the risk of developing a severe stage is for NASH, but chronic alcohol consumption the possibility of severe steatosis is almost triple that in any other etiology. The authors we declare no conflict of interest.

P-33
QUALITY OF LIFE ASSESSMENT USING SF-36 OF THE PRIMARY CAREGIVER OF PATIENTS WITH ADVANCED CIRRHOSIS

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Objective. To evaluate the quality of life of primary caregivers of patients with advanced cirrhosis, of the liver clinic of a tertiary center using the SF-36 questionnaire. **Aim.** To evaluate the quality of life of primary caregivers of patients with advanced cirrhosis, of the liver clinic of a tertiary center using the SF-36 questionnaire. **Material and methods.** A descriptive, cross-sectional, observational and analytical study was conducted to evaluate the quality of life in primary caregivers of patients with advanced cirrhosis, by applying the SF-36 questionnaire, version 1.1, in Spanish. Statistical Analysis: Descriptive statistics were performed with variables of central tendency and dispersion. Statistical mean was reported with standard deviations and ranges. Analyses were done with SPSS version 15. The sample size is of 102 caregivers of patients cirrhotic patients. The t-test was applied by comparing the mean of primary caregivers with the population average in the SF-36 questionnaire (50 ±10). **Results.** 100 questionnaires were applied to primary caregivers of cirrhotic patients and analyzed based on each category of the SF-36. Women (63 *vs*. 37), with an age mean 47.74 ± 9.84. When comparing the categorical results of SF-36 of caregivers to the population average (50±10), differences in the physical function (p = 0.001), physical role (p = 0.001), vitality (p = 0.002), social function (p = 0.001), emotional role (p = 0.001), general health (p = 0.02) and mental component (p = 0.001). **Conclusions.** The deterioration of the quality of life of primary caregivers of patients with cirrhosis is not a parameter nowadays considered on the daily clinical practice and this may have a deleterious effect on patients. Our study shows that the prevalence of deterioration in the quality of life is extremely high. The authors declare no conflict of interest.

P-34
EVALUATION OF ANXIETY AND DEPRESSION IN PATIENTS WITH LIVER CIRRHOSIS HOSPITALIZED IN HOSPITAL GENERAL DE MEXICO

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Background. Anxiety and depression in patients with cirrhosis affects quality of life and mortality rate. **Objective.** Evaluate the presence and degree of anxiety and depression in patients with liver cirrhosis in hospitalized patients at Hospital General de México "Dr. Eduardo Liceaga". **Material and methods.** The Hamilton anxiety and depression scale was used to identify cases among patients with no psychiatric disease, and those with more than 8 points were considered positive for depression and more than 7 points were diagnosed with anxiety in patients with hepatic cirrhosis from February to April of 2018 hospitalized in the service of Gastroenterology, excluding those with hepatic encefalopathy manifest or another psychiatric disorder in the last 6 months. **Results.** 30 patients were included, with a middle age 56 (range 32-71), 15 women and 15 men, Child Pugh ABC 3-15-12, illiterates 4, elementary education 10, high school education 14, college education 2. Etiology: alcohol 20, NASH 3, HCV 3, HBV 1, HAI 1, Cryptogenic 2; Diagnosed with anxiety 25 patients (83%), Depression 25 patients (83%) (mild 4, moderate 9, severe 8 and very severe 4) and 5 non-depressed. **Conclusions.** Patients hospitalized with cirrhosis have a high prevalence of anxiety and depression, and even some

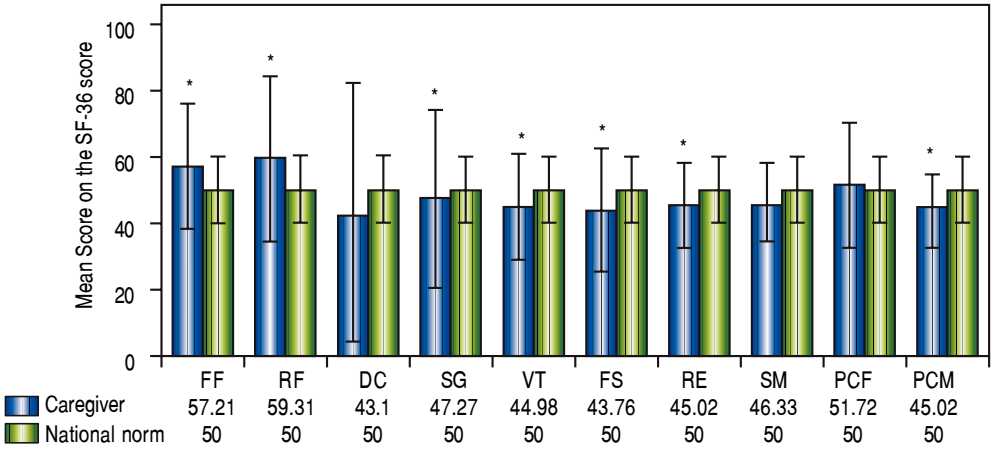

Figure 1 (P-33). *Primary caregivers' quality of life. PF: physical function. PR: physical role. BP: Body pain. GH: general health. VT: vitality. SF: social function. ER: emotional role. MH: mental health. PCS: physical component score. MCS: mental component score. * Denotes P < 0.05*

with severe and very severe depression, is an underdiagnosed and less treated complication, this surely has an impact on the deterioration of their quality of life. Although the studied group was small, we can suggest psychiatric evaluations for all these patients. The authors declare no conflict of interest.

P-35
USE OF THE MONTREAL COGNITIVE EVALUATION SCALE (MOCA) AS A SCREENING TEST FOR MINIMAL HEPATIC ENCEPHALOPATHY IN PATIENTS OF THE LIVER CLINIC

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Introduction. Minimal hepatic encephalopathy (MHE) is diagnosed with neuropsychological tests, the use of the Montreal Cognitive Assessment Scale (MoCA) was proposed as a screening test to detect patients with high risk of MHS. **Objective.** Determine sensitivity and specificity of MoCA as a screening test for EHM. **Material and methods.** A prolective, transversal, analytical study was carried out. Patients diagnosed with cirrhosis were included and evaluated for EHM through the Critical Flicker Frequency (CFF) and Psychometric Hepatic Encephalopathy Test Score (PHES) tests validated for the diagnosis of EHM. ROC curves were used to calculate MoCA sensitivity, specificity, positive and negative predictive values, using CFF as Gold standard. **Results.** 48 patients with liver cirrhosis were evaluated: 54.17% men and 45.83% women, average age of 55 years, alcohol cirrhosis in 29%, Child Turcotte Pugh ABC classifieds in 50% -41.87% -C10%. The frequency of EHM in 54% of patients, two validated tests altered (CFF, PHES). Kappa index (κ) was obtained between MoCA ⋆ PHES/CFF of 0.165 with poor concordance strength (p = 0.164). Only the cylinder copy test (p = 005), subtraction of numbers (p = 0.04) from MoCA correlated with diagnosis of MHE in patients with positive PHES/CFF. **Conclusion.** The Montreal Cognitive Assessment Scale (MoCA) is not an adequate test for EHM screening since it mainly assesses memory domain, and patients with MHE are impaired motor performance. The authors declare no conflict of interests.

P-36
HEPATIC ENCEPHALOPATHY OF MINIMAL CHANGES AND COGNITIVE ALTERATIONS IN ELDERLY ADULTS WITH HEPATIC CIRRHOSIS

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Introduction. The test to detect minimal change hepatic encephalopathy (MCHE) is the neuropsychological battery for hepatic encephalopathy (PHES). The way in which this entity is distributed in older adults has not been explored and could be accompanied by other mental alterations that are added with aging, so identifying the differences between older adults and young people with cirrhosis and EHCM can benefit them in their clinical approach. **Objective.** In elderly and young cirrhotic patients, compare the degree of cognitive impairment with and without diagnosis of MCHE. **Material and methods.** Included adults over 60 years of age and 18 to 59 years old with liver cirrhosis without treatment with antidepressants or anxiolytics, with active infection, or with known neurological diseases. The neuropsychological battery was applied to detect EHCM and the Neuropsi neuropsychological test to detect cognitive deterioration. A binary logistic regression was performed to determine the contribution of age and the detection of EHCM in cognitive deterioration. **Results.** Included 71 patients, 34 young people (age 49.32 ± 9.01, 19 women) and 37 adults over 60 years of age (age 66.03 ± 5.12, 21 women). The EHCM was detected in 54.8% of older adults versus 45.2% in young adults. Cognitive impairment was higher in young adults 55.2% than in older adults 44.8%. The best predictor for cognitive deterioration was having a diagnosis of CHD, (OR = 2.78) than the age group. **Conclusions.** In patients with cirrhosis, ECHM is more frequent in older adults, however, cognitive deterioration is higher in young adults. It is more than double the possibility of having cognitive impairment in addition to the EHCM in young adults than in older adults, which may be associated with the severity of liver disease.

P-37
IMPACT OF THE TIPS ON THE MUSCLE MASS OF PATIENTS WITH PORTAL HYPERTENSION

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Introduction. Malnutrition is common in patients with portal hypertension. It's related to the increase in morbimortality, mainly when sarcopenia is diagnosed. Transjugular intrahepatic portosystemic shunt is effective for portal decompression, it's one of the main therapies prior to liver transplantation. It has been shown that TIPS can help reduce sarcopenia in these patients. **Objectives.** Determine if there's an increase in psoas muscle in patients undergoing TIPS, and evaluate if there's a relationship between the psoas area and TIPS dysfunction. **Material and methods.** Retrospective, cross-sectional study. Fifty patients were analyzed, 18 cases were included (5 refractory ascites, 2 portal thrombosis, 7 HTPH, 4 Budd-Chiari syndrome) during 2010-2017. The area of the right psoas muscle, normalized to the height of the patient, was assessed with tomography 96 days before and 348 days after the procedure. The post-TIPS muscle hypertrophy was compared between patients with correct function against those with dysfunction. In addition, the muscle area was assessed as a prognostic factor for TIPS dysfunction. Test-T was used for the statistical analysis. **Results.** After TIPS, there was an increase in muscle area in average of 39.3% (120.8 mm^2/m^2) in patients with functional TIPS. In patients with dysfunctional TIPS, there was a reduction in the psoas area of 4% (-9.9 mm^2/m^2).On average, patients with dysfunctional TIPS presented, before the procedure, a smaller area of psoas (235.3 mm^2/m^2), and were compared with patients who

did not present dysfunction (297.9 mm^2/m^2) ($p < 0.05$). **Conclusion.** A functional TIPS is related to an increase in muscle mass, reflected in the area of the psoas muscle in patients with portal hypertension. Patients with lower muscle mass have a higher risk of TIPS dysfunction.

P-49
INTESTINAL KAPOSI'S SARCOMA IN A PATIENT WITH CIRRHOSIS

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Introduction. We present a case of iatrogenic sarcoma or sarcoma associated with immunosuppression related to cirrhosis. Currently, this is second report in the literature of a case of cirrhosis associated with gastrointestinal Kaposi´s sarcoma unrelated to liver transplant or HIV infection. The previous case reported was of a 66-year-old male patient diagnosed with alcoholic cirrhosis in whom stomach lesions were identified. Our purpose is to inform this infrequent relationship. **Case report.** This was a 66 year old male patient who consulted due to melenas. On admission he was hypotensive, and physical exam findings included edema, ascites and angiomatous lesions on his legs, thighs and palate. An endoscopy and a colonoscopy showed violaceous papular lesions in the duodenum and colon, biopsy and immunohistochemistry confirmed Kaposi's sarcoma. The ELISA test for HIV was negative. The patient developed acute liver failure in addition to the chronic failure, with type 1 hepatorenal syndrome. He was not a candidate for liver transplant and died during hospitalization. **Discussion.** The true prevalence of Kaposi sarcoma in patients with cirrhosis is still unknown. Most patients with gastrointestinal Kaposi's sarcoma in the variety associated with AIDS are asymptomatic (2), therefore endoscopies carried out for other reasons should be used to study suspicious lesions. The differential diagnosis includes gastrointestinal stromal tumors, angiosarcoma, and fusiform cell melanoma. The identification of HHV-8 is recommended for all specimens with a fusiform appearance; this marker has a 99% sensitivity and 100% specificity. Altered cellular immunity and HHV-8 antibodies have been described in cirrhosis, which would also support the role of HHV-8 in tumor development. Treatment depends on the epidemiological variant, at the moment no specific treatment has been established in this subgroup of patients.

P-50
TRANSIENT ELASTOGRAFY CAN PREDICT THE DEVELOPMENT OF HEPATOCELLULAR CARCINOMA IN HEPATITIS C CIRRHOTIC PATIENTS

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Background and aims. Hepatitis C virus (HCV) is one of the main causes of cirrhosis worldwide. Furthermore, as the degree of fibrosis increases, there is a greater risk of developing hepatocellular carcinoma (HCC).Transient Elastography (TE) is a non-invasive tool that stratifies the degree of fibrosis. The aim of this paper is to determine the stiffness values that may identify risk groups for HCC, comparing with clinical non-invasive liver serum markers (MELD, APRI, FIB-4). **Material and methods.** A cohort of 100 consecutive hepatitis C patients was included between 2011 and 2016 with a minimum baseline liver stiffness of 12 kPa. These patients were evaluated with laboratory tests, endoscopy, Doppler ultrasound and TE, as well as MELD, APRI and FIB-4 scores. We used the Lausen's test to find the best cut-off point for HCC occurrence and the logrank test, Kaplan-Meier estimates and C-statistic test to better evaluate performance of each method over time. **Results.** The mean age was 57.6 ± 10.6, and 52% were female (N = 52). Eighteen (18) patients developed HCC. Median time from baseline to diagnosis of HCC was 2.6 years (range, 0.02-4.74). The predictor cut-off points of HCC occurrence: TE 21.1 kPa ($p = 0.0083$), MELD 6.8 ($p = 0.004$), APRI 1.63 ($p = 0.022$) and FIB-4 5.6 ($p = 0.0061$). The highest index for the first 6 months was FIB-4, and for over three years it was TE, for which performance progressively improved . A combination of TE and FIB-4

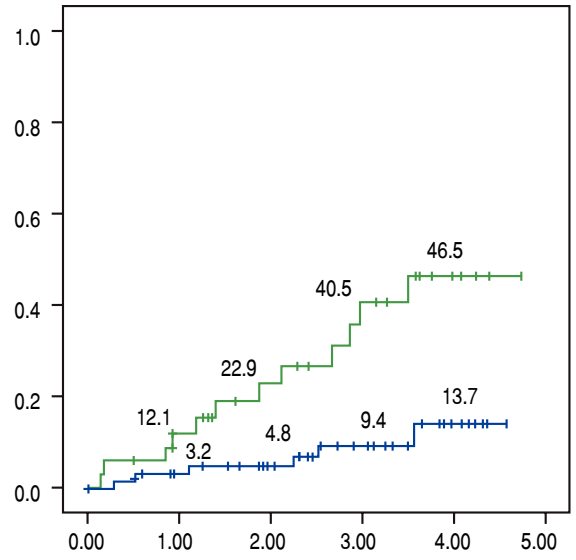

Figure 1 (P-50). *Cumulative incidence curves of HCC in HCV pts with a cut-off values 21.1 kPa in transient elastography and FIB-4 > 5.6, p = 0.0014*

achieved the best rates over 5 years of follow-up on the cumulative incidence curve (46.5%) (Figure 1). **Conclusions.** Non-invasive liver fibrosis evaluation methods (serum markers and mechanical), can be used to predict greater risk of developing HCC in selected HCV cirrhotic patients with elevated baseline TE (> 12 kPa). TE was the best non-invasive method of predicting the risk of an HCC event, with a cut-off of 21.1 kPa during long term follow-up. The combination of TE + FIB-4 was the best predictor of HCC incidence over 5 years. **Conflict of interest.** The authors declare that they have no conflict of interest.

P-57
HYPOTHYROIDISM IS ASSOCIATED WITH THE PRESENCE OF SIGNIFICANT LIVER FIBROSIS (SLF) IN PATIENTS WITH NON ALCOHOLIC LIVER DISEASE (NAFLD)

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Introduction. Previously retrospective studies has pointed to hypothyroidism as a risk factor for NAFLD patients in Colombia population. **Objectives.** To determine the association between the history of hypothyroidism and SLF in patients with NAFLD in a prospective colombian cohort. **Material and methods.** A cross-sectional, prospective study was conducted. All NAFLD patients diagnosed by ultrasound from September 2017 to May 2018 were included. Other causes of chronic liver disease were rule out. The clinical and analytical data did not differ more than 15 days from the completion of the elastography. An elastography ≥ 7.5 Kpa was indicative of SLF. **Results.** 121 patients were included. The mean age was 47 years (SD 15) and 56% were male. The prevalence of hypertension, carbohydrate metabolism disorders, hypertriglyceridemia, hypercholesterolemia, hypothyroidism and chronic renal failure was 34.7%, 50.4%, 49%, 46%, 11% and 2%, respectively. The history of hypothyroidism (23% *vs.* 7.4%, p = 0.034), the levels of TSH (p = 0.05), AST (p = 0.02) and albumin (p = 0.03) were associated with SLF. **Conclusion.** A history of hypothyroidism and TSH levels are solid risk factors for FHS in patients with NAFLD.

P-59
PREDICTIVE MODEL OF FIBROSCAN AND PLATELETS TO RULE OUT THE PRESENCE OF ESOPHAGEAL VARICES (VE) IN PATIENTS WITH CIRRHOSIS

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Introduction. A strategy based on the combination of elastography (< 21 Kpa) and platelets (> 150,000) has been proposed to reduce the need for endoscopy in the screening of VE in patients with cirrhosis. This strategy has not been validated in South America. **Objectives.** To determine the usefulness of an index composed of elastography (< 21 Kpa) and platelets (> 150,000) to rule out the presence of VE. **Material and methods.** Analytical cross-sectional study. We included patients with cirrhosis and no history of esophageal varices who were requested for a screening endoscopy between September 2017 and May 2018. All patients underwent a digestive endoscopy and a fibroscan with a difference of no more than six months. **Results.** 48 patients were included. 41 did not present VE in the endoscopy and 12 complied with the conditions of the index [25%] (ET < 21 Kpa + PLT > 150,000), 11 of these did not have VE and the one left had small VE. However, only 16% of patients who did not meet the 2 conditions (ET < 21 Kpa + PLT > 150,000) presented VE. The sensitivity, specificity, positive predictive value and negative predictive value (NPV) to detect VE were 0.85, 0.73, 0.16 and 0.92, respectively. **Conclusion.** The ET + PLT index has a high NPV and it seems useful to identify a population susceptible of not performing screening endoscopies.

P-69
ASSESSMENT OF HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH COMPENSATED CIRRHOSIS. PRELIMINARY REPORT

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Introduction. Cirrhosis is associated a wide variety of symptoms that can negatively affect patients' health-related quality of life (HRQL). **Objectives.** To assess the impact of compensated cirrhosis on patients' experience and HRQL. **Material and methods.** A descriptive, cross-sectional observational study was conducted at Institute of Gastroenterology, Havana, Cuba between February 2017-April 2018. Subjects with compensated cirrhosis (5-6 Child points) who were seen in the outpatient clinics were enrolled after informed consent. Clinical data was collected and a disease specific HRQL instrument, Chronic Liver Disease Questionnaire, was self-administered. Responses for each question were ranked on a 7-point Likert scale, higher scores indicating better HRQL. We assumed that median CLDQ score ≤ 5 indicate poor HRQL. Data were analyzed for descriptive statistics. **Results.** To date, 51 patients with cirrhosis have been enrolled (66.6% male, average age 56 (12.6) years. Etiologies of liver disease were related to hepatitis C virus infection: 23 (45%); non-alcoholic steatohepatitis: 11 (21.5%) and alcoholic liver disease: 7 (13.7%). The mean (SD) CLDQ total score was 3.9 (1.3) which indicates poor HRQL. In fact, only 14 patients (27.4%) had total CLDQ score > 5 indicating good HRQL while 37 (72.5%) had CLDQ scores within the poor range. Furthermore, all the CLDQ domains were negatively affected in patients with cirrhosis: fatigue (3.1 points), systemic symptoms (3.7), activity (4), worry (4.1), emotional functions (4.2) and abdominal symptoms (4.3). **Conclusions.** Patients with compensated cirrhosis seen in the outpatient clinics have severe impairment of HRQL. Further assessment of HRQL in cirrhotic patients are currently underway.

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PREDICTORS OF POOR HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH COMPENSATED CIRRHOSIS. PRELIMINARY REPORT

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Introduction. The concept of health-related quality of life (HRQL) incorporates many aspects of an individual's experience, the general well-being, satisfaction, social and physical functioning related with the underlying chronic liver disease. **Objective.** To identify factors related to the perception of poor HRQL in patients with compensated cirrhosis. **Material and methods.** A descriptive, cross-sectional observational study was conducted at Institute of Gastroenterology, Havana, Cuba between February 2017-April 2018. Subjects with compensated cirrhosis (5-6 Child points) who were seen in the outpatient clinics were enrolled after informed consent. Clinical data was collected and a disease specific HRQL instrument, Chronic Liver Disease Questionnaire, was self-administered. Responses for each question were ranked on a 7-point Likert scale, higher scores indicating better HRQL. We assumed that median CLDQ score ≤ 5 indicate poor HRQL. Data were analyzed for descriptive statistics. **Results.** To date, 51 patients with cirrhosis have been enrolled (66.6% male, average age 56 (12,6) years. Etiologies of liver disease were related to hepatitis C virus infection: 23 (45%); non-alcoholic steatohepatitis: 11 (21.5%) and alcoholic liver disease: 7 (13.7%). The mean (SD) CLDQ total score was 3.9 (1.3) which indicates poor HRQL. The lowest scores were noted to be in the fatigue domain of CLDQ (3.1 points). Factors associated with poor HRQL as indicated by low CLDQ scores included age greater than 60 years ($p = 0.001$); hemoglobin less than 100 g/L ($p = 0.03$); hypoalbuminemia ($p = 0.001$), thrombocytopenia ($p = 0.04$) and a history of previous decompensation ($p = 0.001$). **Conclusions.** Cirrhosis has profound negative impact on HRQL with the fatigue domain of CLDQ most severely affected. Factors associated with severity of liver disease, anemia and age were associated with HRQL impairments.

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EVOKED P300 IN THE DIAGNOSIS OF MINIMAL HEPATIC ENCEPHALOPATHY

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Background. The current gold standard for detecting Minimal hepatic encephalopathy (MHE) is the Psychometric Hepatic Encephalopathy Scores (PHES) and the Critical Flicker Frequency (CFF). Combined sensitivity (61%; 51-67% IC) and specificity 79% (75-83% IC) (Meta-analysis of 9 studies, 622 patients) has been challenged by a non-psychometric approach. The P300 is a measurement obtained directly from the electroencephalogram reflecting impairment in brain activity and has not been compared to the reference tests of relevant studies. **Objective.** Determine the sensitivity and specificity of the potential evoked P300 vs. PHES and CFF combined. **Material and methods.** Participants were 127 patients with liver cirrhosis 56 ± 10.1 years of age and 51 healthy people 45.83 ± 12.07 years of age. The MHE was determined if both PHES and CFF tests were positive. Cross validation test and **Results.** MHE was detected in 40 patients (31.5%). P300 of low difficulty was impaired in 56.2% of cirrhotic patients. The sensitivity was 66.5% and specificity of 75.7% *vs.* (61% and 79% combined). **Conclusions.** P300 alone showed higher sensitivity as PHES and CFF combined (closer to the upper limit of the IC) and good specificity (closer to the lower limit of the OC). **No conflict of interests.** This work has been totally subsidized by funds from CONACYT project 234269.

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PREVALENCE OF LIVER DISEASE RISK FACTORS IN LATIN AMERICA: AN OPEN-POPULATION SURVEY OF 18 COUNTRIES

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Introduction. Liver diseases are a major cause of illness and death around the world. Studies to determine prevalence of multiple risk factors for liver disease in open population from Latin America had not been realized. **Aim.** To determine the prevalence of multiple risk factors for liver disease in open population from Latin America. **Material and methods.** Observational, Cross-sectional, prospective, descriptive study carried out between March and April 2018, by the application of a specific survey in open population, older than 18 years, from 18 Latin American countries. The survey was distributed through different social networks; with a final sample of 6,759 individuals; statistical analysis was performed by using central tendency and dispersion tests. **Results.** The final analysis included sample from 18 Latin American countries, with a total of 6,759 individuals, 58.75% (n = 3,971) female, and 41.25% (n = 2,788) male; 68.5% (n = 4633) had Non-Alcoholic Fatty Liver Disease (NAFLD) risk factors; as for chronic hepatitis risk factors, we found incomplete HBV vaccination schedule 46% (n = 3,109), unsafe sexual practices 35.2% (n = 2366), and 9.6% (n = 650) had piercings and/or tattoos performed in not certified establishments. 15.7% (n = 1061) presented alcohol consumption enough to induce risk for Alcoholic Liver Disease (ALD); 818 (12.1%) showed risk for Autoimmune Liver Diseases, and 9.4% (n = 635) presented high risk conducts for developing acute viral hepatitis. Finally, we found that, in average, every adult individual in Latin America presented 4.7 simultaneous liver disease risk factors at the same time. **Conclusions.** Based on our results obtained from 18 countries, NAFLD risk factors are the predominant risk factors for liver disease in Latin America, followed by those for Chronic Viral Hepatitis. As a relevant

finding, every surveyed individual presented an average of 4.7 liver disease risk factors simultaneously. We suggest further studies to corroborate our findings.

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LIPID PANEL ALTERATIONS IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE (NAFLD) AND SIGNIFICANT HEPATIC FIBROSIS

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Introduction. Alterations in the lipid panel are frequent in chronic liver diseases. Transient elastography (fibroscan®) evaluates liver stiffness and hepatic steatosis. Previously, our group has described that serum lipids, correlate with the CAP value of fibroscan®. However, it has been observed that as liver fibrosis progresses, lipid synthesis decreases; although the evidence supporting these findings is still small. AIM: To describe the alterations in the lipid panel in patients with steatosis and significant fibrosis compared with non significant fibrosis patients and without steatosis. **Material and methods.** Cross-sectional study. Records of patients in whom fibroscan® was performed between 2013 and May 2018 to obtain the lipid panel (triglycerides, plasma cholesterol, HDL and LDL). Hepatic steatosis was quantified by CAP and liver stiffness by the kilopascals (kpa), both measurements by Fibroscan®. For the statistical analysis were calculated parametric and nonparametric tests. A value < 0.05 was considered significant. The analysis was undertaken using SPSS v.22 software. **Results.** Sixty-eight patient were included. 60.3% were men. The mean age was 50.93 ± 12.11 years. Differences were observed between triglycerides (213.66 ± 109.92 *vs.* 132.98 ± 43.06 $p = 0.003$) and total cholesterol (208.72 ± 47.58 *vs.* 176.09 ± 39.14 $p = 0.017$), which were lower in patients with significant fibrosis (F3-F4). A significant correlation was observed between CAP value and triglycerides ($r = 0.511$, $p \leq 0.001$), total cholesterol ($r = 0.357$, $p = 0.003$), LDL cholesterol ($r = 0.241$, $p = 0.047$), and negative correlation between fibrosis grade and plasma triglycerides ($r = -0.263$ $p = 0.030$). **Conclusions.** Our results suggest that the lipid panel correlates with the increase in hepatic steatosis measured by CAP in patients with NAFLD. Also, we observed that the significant hepatic fibrosis patients had a lower concentration of tryglycerides, probably due to liver inability to synthesize lipids. These findings demonstrate lipid panel potential utility as an indirect marker of fibrosis progression and hepatic steatosis.

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FACTORS ASSOCIATED TO MALNUTRITION ESTIMATED THROUGH HANDGRIP STRENGTH IN CIRRHOTIC PATIENTS IN CARTAGENA, COLOMBIA

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Introduction. Liver cirrhosis represents the final phase of many chronic diseases of the liver, its course depends on multiple conditions, including the nutritional status, becoming a current and essential cornerstone of cirrhosis follow up. **Objectives.** Identify the factors associated with malnutrition estimated by the handgrip strength in cirrhotic patients. **Material and methods.** This cross-sectional and analytical study. Patients with liver cirrhosis were included ($n = 51$). Assessing nutritional status by hand grip, subjective global assessment (SGA), and by body mass index (BMI); the caloric intake was estimated with a 24-hour reminder and the basal energy expenditure was calculated by indirect calorimetry and by the Harris Benedict formula. Malnutrition was defined as a force in the hand-grip lower than the 5th percentile adjusted for age and sex. **Results.** Of the 51 patients with liver cirrhosis, 51% were men, average age of 64.2 ± 11.6 years, 70% Child Pugh A and 30% Child Pugh B, 38% had a daily caloric intake lower than their energy consumption basal and 50% had a basal energy expenditure higher than that calculated by Harris Benedict equations. The prevalence of malnutrition by hand grip was 60.8% and 32% by SGA. The only variable associated with the presence of malnutrition by hand grip was moderate malnutrition by SGA ($P = 0.02$). The variables associated with energy consumption were age ($p = 0.03$), female sex ($P = 0.001$), hand grip ($P = 0.001$), BMI ($P < 0.001$), decompensation ($P = 0.03$) and platelet count ($P = 0.02$). **Conclusion.** The prevalence of malnutrition is high in patients with cirrhosis. The intake does not cover the energy requirements in a high percentage of patients and the basal metabolic rate seems to increase in patients with more advanced disease.

P-82
EARLY INTERVENTION IMPROVED 25(OH)D LEVELS IN PATIENTS WITH CHRONIC LIVER DISEASE WITH OR WITHOUT CIRRHOSIS AND LIVER TRANSPLANT

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Background. Vitamin D (VD3) is a secosteroid hormone, which is mostly known as a regulator of calcium and bone metabolism. Supplementation with vitamin D has been shown to benefit skeletal conditions, liver function and immune system. **Aim.** To evaluate levels of 25-hidroxyvitamin D [25(OH)D], as well as basal and posttreatment lumbar and hip bone mineral

Table 1 (P-82). Levels of vitamin D and BMD in patients with CLD and LT.

Groups (n = 21/16/22)	G1		G2		G3	
25(0H)D	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
Deficient (< 20 mL) (n = 4/8/7)	15.51 ± 4.438	39.86 ± 12.97*	14.80 ± 3.10	33.50 ± 7.84*	12.95 ± 2.47	33.87 ± 16.68*
Insuficient (20-30 ng/mL) (n = 4/4/3)	25.17 ± 1.49	38.38 ± 11.88*	24.80 ± 3.42	41.30 ± 7.42	27.43 ± 3.15	30.90 ± 3.55
Optimum (> 30 ng/mL) (n = 13/4/12)	36.22 ± 3.79	31.82 ± 9.49	40.00 ± 8.91	37.21 ± 14.33*	44.65 ± 13.50	40.93 ± 12.30
BMD (T-score, hip)						
Osteoporosis (< -2.5) (n = 5/3/9)	-2.95 ± 0.40	-2.98 ± 0.60	-2.73 ± 2.20	-2.60 ± 2.06	-2.86 ± 0.48	-2.58 ± 0.62
Osteopenia (-1.5) (n = 10/8/8)	-1.92 ± 0.24	-1.52 ± 1.23	-1.44 ± 0.24	-1.71 ± 1.19	-2.16 ± 0.29	-1.40 ± 1.06*
Normal (> .1.4) (n = 6/5/5)	-0.27 ± 1.09	-1.08 ± 0.73	-0.72 ± 1.72	-0.94 ± 0.83	-0.80 ± 0.43	-1.26 ± 0.82
BMD (T-score, lumbar)						
Osteoporosis (< -2.5) (n = 5/3/9)	-3.27 ± 0.48	-2.99 ± 0.57	-3.4 ± 1.13	-3.4 ± 1.83	-3.43 ± 0.73	-2.76 ± 0.39
Osteopenia (-1.5) (n = 10/8/8)	-2.10 ± 0.23	-2.15 ± 0.85	-2.08 ± 0.29	-1.31 ± 1.20	-2.26 ± 0.42	-2.00 ± 0.70
Normal (> .1.4) (n = 6/5/5)	-0.77 ± 0.85	-1.10 ± 1.30	-0.54 ± 0.72	-0.25 ± 0.91	-0.85 ± 0.42	-0.66 ± 0.47

** p < 0.05, Baseline vs. follow-up, in each group. ANNOVA.*

density in patients with chronic liver disease (CLD) and liver transplant (LT). **Material and methods.** 59 patients with CLD and LT were included, mean age 63 ± 7yo (range 44-74 yo), 45 (76%) females. Dose of VD3 ranged from 1,000 to 5,000 U qd. Bone mineral density (BMD) and levels of 25(OH)D, were measured at baseline and after treatment. Patients were seen at the liver Unit between 2005 and 2017. G1: 21 (36%) patients with CLD without cirrhosis. G2: 16 (27%) patients with cirrhosis, and G3: 22(37%) patients with LT, who received tacrolimus or sirolimus with mycophenolate as immunosuppressor treatment. Other treatments were alendronic acid, ibandronic acid, zolendronic acid or denosumab, accordingly. **Results.** Patients with deficient levels (< 20ng/mL) of 25(OH)D, improved to optimal levels ($p < 0.05$) in the 3 groups studied. However, patients with insufficient levels (20-30 ng/mL) only G1 exhibited improvement to optimal levels ($p < 0.05$). BMD studies showed an improvement in hip osteopenia only in G3 ($p < 0.05$). Osteoporosis remained without change in spite of treatment in all three groups (Table 1). **Conclusions.** Early intervention with VD3 treatment resolved deficient levels in patients with CLD with or without cirrhosis and in patients with liver transplant. G2 without cirrhosis had improvement in 25(OH)D in all the patients. Hip osteopenia only improved in patients with LT Osteoporosis remained the same in all groups. The authors declare that there is no conflict of interest.

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CIRRHOSIS STRATIFIED IN TWO STAGES OF SEVERITY BY ELASTOGRAPHY (SHEAR WAVE ELASTOGRAPHY)

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Background and aims. In chronic liver disease (CLD), FibroTest (FT, BioPredictive), and transient elastography (TE M-probe, Echosens), are associated with increased overall and liver-related mortality and morbidity. Moreover, FT and TE-M were validated as markers of occurrence of cirrhosis without complications (F4.1), oesophageal varices (EV) grade 2 or more (F4.2), and severe complications (SC) (F4.3) – EV rupture, encephalopathy, ascites and hepatocellular carcinoma (HCC) (J Hepatol 2014). The aim of this study was to extend the validation of elastography by 2D-shear wave elastography (2D-SWE), as a prognostic marker of occurrence of cirrhosis without com-

plications (F4.1) *vs.* cirrhosis with EV and SC (F4.2-F4.3). **Material and methods.** 3,853 patients (pts) with CLD were pre-included prospectively from Jan-2012 to Dec-2013. 3627pts had 2D-SWE, and 2686pts (74.1%) had all methods. Appli-2D-SWE was defined after excluding minimal stiffness < 0.2kPa. Cirrhosis was defined by FibroTest ≥ 0.74 and TE-M = 12.5kPa respectively. The applicable 2D-SWE, TE-M, -XL and M or XL and FT were, respectively, 90.4%, 80.0%, 90.8%, 94.5% and 99.5%. **Results.** 585pts with applicable-2D-SWE and cirrhosis as per FT or TE-M-XL were followed up for a median(range) 30(0-62.3) months and 13(4.2%) died. None had history of complications, after 30 months had occurred 47 varices (F4.2, incidence of 8.0%) and 50 severe complications (F4.3 8.6%), including HCC in 20 (3.4%). The survivals (95%CI) without EV/SC were: 78.8% (69.4-88.2) in the group F4.23 (2D-SWE ≥ 20kPa); 89.9% (84.3-95.5) in F4.1 (12.5kPa ≥ 2D-SWE< 20kPa, p = 0.025 *vs*. F4.23); and 94.5% (91.4-97.6) in the group without cirrhosis (noF4) (p = NS *vs*. F4.1). Among pts with concomitant appli-TE, FT and 2D-SWE, the prognostic AUROCs (95%CI) for esophageal varices and severe complications were: 0.94 (0.90-0.97), 0.92 (0.87-0.95, p = NS *vs*. TE) and 0.79 (0.69-0.86, p < 0.01 *vs*. TE and *vs*. FT), respectively. **Conclusion.** Liver biomarkers, such as 2D-SWE, have prognostic values in patients with CLD for predicting varices and severe complications in cirrhotic patients. Previously validated FT and TE predictions of varices and severe complications were comparable and both were superior to 2D-SWE.

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STRATIFICATION OF CLINICAL CIRRHOSIS COMPLICATIONS BY BAVENO CRITERIA

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Background and aims. Baveno VI statement established that screening endoscopy can be avoided in patients with compensated chronic liver disease, platelet count > 150,000/mm^3 and liver stiffness measurement < 20kPa. However, there is few data regarding further development of complications of cirrhosis and survival in patients at low risk. The aim of this study was to evaluate 4 years survival and complications in patients at low risk according to Baveno VI criteria. **Material and methods.** Retrospective study was conducted in cirrhotic patients consecutively evaluated in a tertiary center between 2012 and 2017. Patients with compensated cirrhosis (defined by an applicable liver stiffness measure (LS) >12.5 kPa) were included. They were divided into two groups according to BAVENO VI criteria: Baveno VI positive (Bav +) with platelet count < 150,000/mm^3 and FS > 20kpa, Baveno VI negative (Bav-) with platelet count > 150,000 mm^3 or FS < 20kPa. Complications of cirrhosis including ascites, hepatic encephalopathy, jaundice, variceal bleeding and hepatocellular carcinoma were recorded. Survival was compared between groups. **Results.** 241 patients with mean age of 57 years, male gender 70.5% and Child-Pugh (CP) score 5. Etiologies were 52% HCV, 18% NASH, 11% alcohol, 10% HBV and 9% other causes. One hundred and fifty-six patients (65%) were classified in group Bav+ and 85 (35%) in Bav - with mean age of 57 years in Bav + and in Bav -; Preponderance of male gender was observed in both groups, 70.5%, Bav+ and Bav -; Etiologies HCV and alcohol were significantly more frequently in Bav + than Bav -. High risk varices were observed in 14% of patients: 1 patient in Bav-(1.2%) and 33 patients in Bav +(21%), p = 0,004. In Bav+ CP median was 5.2 *vs.* 5.1 in Bav - (p = 0.12). Bav + *vs*. Bav - showed Platelet count (137,000 U/mm^3 *vs.* 214. 000 U/mm^3, p = 0.004) and LS measure (23.7 *vs.* 14.5 kPa, respectively, p = 0.0004) different; sixty-one (25%) patients were submitted to HCV treatment and 50 (21%) acquired sustained virological response (82% SVR). During follow-up, in Bav + group 5 patients developed encephalopathy, 4 variceal bleeding, 12 ascites and 14 CHC; in Bav - nobody developed encephalopathy (p = 0.09) or variceal bleeding (p = 0.13), 3 patients developed ascites (p = 0.27) and 5 CHC (p = 0.39) All portal hypertension complications considered, excluding hepatocellular carcinoma, tended to be more common in Bav + patients (p = 0.06); In HCV patients PH complications were also more common in Bav +(p = 0.05); In Bav +, 2 deaths (1%) were observed and no deaths were observed in Bav – group (p = 0.29). **Conclusion.** In this study, followed for 4 years, Bav -patients did not presented variceal bleeding, liver encephalopathy or death. All portal hypertension complications tended to be less often observed in Bav - group. Therefore, Baveno's criteria seems to be a reliable tool for predicting cirrhosis complications.

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PREVALENCE OF HYPERTENSIVE PORTAL GASTROPATHY IN CIRRHOTIC PATIENTS OF THE GASTROENTEROLOGY UNIT HOSPITAL "MIGUEL PÉREZ CARREÑO". JANUARY-JUNE 2017

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Introduction. The portal hypertensive, non-inflammatory vascular gastropathy established by Mc Cormack in 1985 as a clinical, endoscopic and histological correlation of the gastric lesions observed in the cirrhosis with portal hypertension histological; finding principal dilatation of capillaries and venules of the mucous and sub mucous without significant inflammation. The mechanisms of production, not well clarified, involves the microcirculation of the mucous with changes in the pressure of oxygen (hypoxia) and ectasia favors the passage of blood to the mucous, the sub mucous hemorrhage escapes between the epithelial cells and bleeding ensues. Being a non-inflammatory vascular entity, it is not susceptible to treatment with drugs that decrease the secretion. **Objective.** To determine the prevalence of hypertensive gastropathy in cirrhotic patients of the gastroenterology unit of the Miguel Pérez Carreño Hospital, as well as the importance of this pathology as a cause of gastrointestinal bleeding in patients with portal hypertension. **Material and methods.** We included 24 patients who attended the gastroenterology unit in the period January-June 2017 with clinical criteria of liver cirrhosis, in their evaluation they underwent abdominal ultrasound. With findings of: cirrhotic level. Gastroscopy was performed either because the patient was admitted in the context of upper gastrointestinal bleeding or as part of his evaluation to determine the presence or absence of varicose veins, esophageal, during this exploration the presence of some degree of hypertensive gastropathy using the McCormack classification of moderate or several of the mucous alterations evidenced during the study. **Results.** Hypertensive gastropathy has a prevalence (1.6%) and incidency of 65% in patients with clinical, echographic and endoscopic criteria of portal hypertension. Gastropathy findings Moderate (73%) Severe (27%) According to Mc CormacK, of bleeding (0%). **Conclusion.** The low rate of bleeding of this entity does not represent an important cause of associated morbidity and mortality.

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WILSON'S DISEASE: RETROSPECTIVE CLINICAL AND EPIDEMIOLOGICAL ANALYSIS OF 84 PATIENTS DIAGNOSED IN NORTHEASTERN BRAZIL

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Introduction. Wilson disease (DW) arises from a recessive autosomal hereditary defect on chromosome 13 leading to a deficit of copper biliary excretion and accumulation in the liver, central nervous system, cornea, among others. Rare disease with an estimated incidence of 1: 30,000 to 1: 100,000 live births, increased in some regions where marriage between blood relatives is frequent. In northeastern Brazil, notably in Ceará, this kind of marriage is frequent, allowing so many cases diagnosed. **Objective.** A descriptive cross-sectional and epidemiological study of patients with Wilson's disease who were followed up at the HUWC-UFC Gastro-Hepatology and Neurology service**. Methodology and results.** Patients diagnosed and followed up with DW from 1977 to june/2018, in the HUWC-UFC Gastro-hepatology and Neurology Services. 84 patients were diagnosed with Wilson's Disease. 59.5% (50/84) were males, mean age 22.08 (ranging from 2 to 66 years). Of the 84 patients, 17 (20.2%) were asymptomatic and were diagnosed through family screening of previously diagnosed siblings. 67/84 (79.8%) of the patients were symptomatic of these, 39/67 (58.2%) had acute or chronic hepatic manifestations. 27/67 (40.3%) had neuropsychiatric status, only one patient (1.5%) had hemolytic anemia. The mean time between onset of symptoms and diagnosis was 22.2 months, with 31.5 months for patients with psychiatric manifestations, 23.1 months for liver disease. The presence of Kayser-Fletcher rings occurred in 80% of patients with neuropsychiatric symptoms but only 63% and 17% in patients with hepatic manifestation and family screen, respectively. Ceruloplasmin was low in 89.3% of the patients, being normal in the others. There was a correlation between the initial presentation and death, being more frequent in those with hepatic manifestation 17 (50%), Neuropsychiatric 2 (8.7%) and only one patient diagnosed at screening died, with $p = 0.0014$. **Conclusion.** The diagnosis of Wilson's disease can be difficult and time-consuming and should always be remembered.

P-101
SURVIVAL OF PATIENTS WITH HEPATIC CIRRHOSIS AT 5 YEARS OF FOLLOW UP

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Introduction. Survival at 5 years of patients with compensated cirrhosis is estimated between 80 and 86%. The development of complications marks the passage to the decompensated phase. In the latter, survival at 5 years is estimated between 14 and 35%. **Objective.** In Cuba, chronic liver diseases, including cirrhosis,

are among the 10 leading causes of death. Given this scenario, we are motivated to know which of the long-term survival of patients with cirrhosis. The present study determined the survival at 5 years in cirrhotic patients evaluated in the Medical Surgical Research Center (Cimeq. **Material and methods.** A descriptive, longitudinal, retrospective study was conducted on 120 cirrhotic patients followed at Cimeq between 2008 and 2016. The mean follow-up was 5.3 years. The survival analysis was performed by determining the Kaplan-Meier curves. **Results.** Overall survival at five years was 40%. According to the Child-Pugh stages, stage A had a survival of 96.7%, B of 63.6% and C of 25.3%. In relation to the clinical stages of cirrhosis at the beginning of the evaluation, stages 4 (52.5%) and 5 (25.8%) predominated, with survival rates of 25.4 and 22.6%, respectively. **Conclusions.** At five years of follow-up, significantly lower survival was observed while the Child-Pugh score were higher and clinical stages 4 and 5 of the decompensated phase.

P-102
BLEEDING EVENTS AFTER ENDOSCOPIC BAND LIGATION AND USE OF PROPHYLACTIC PLASMA AND/OR PLATELET TRANSFUSION IN PATIENTS WITH CIRRHOSIS AND ESOPHAGEAL VARICES

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Background. Endoscopic band ligation of esophageal varices is commonly performed in patients with cirrhosis. Prophylactic administration of platelets and fresh frozen plasma (FFP) is recommended in subjects with low platelets/prolonged INR. In this analysis we evaluated post- EBL bleeding event in undergoing outpatient and the use of prophylactic administration of blood products in this setting. **Material and methods.** Retrospective analysis of consecutive EBL procedures in patients with cirrhosis at Hospital Clinic, Barcelona from 01/2010-12/2016. Fresh frozen plasma FFP and platelet transfusion were administered at the discretion of the clinician if INR was > 1.5 and/or platelet count < $50x10^9$/L. Patient demographics, endoscopic findings, bleeding events after EBL and the use of prophylactic FPP or platelets were recorded. **Results.** 467 patients underwent 1,174 EBL procedures: (70% male), etiology: HCV and alcohol (77%), median MELD 11, Child A/B/C (62/31/7%). EBL procedures were performed for primary (51%) or secondary (49%) prophylaxis. Median procedure per patient was 2 (1-4). The prophylactic transfusion protocol was only followed en 15% and 21% of patients that met criteria for an elevated INR and/or low platelets respectively. FPP and/or low platelets were administered in 26 patients (5.6%) and 63 procedures (5.4%). Bleeding occurred in 13 patients (2.8%) and 21 procedures (1.8%). Bleeding was due to post-EBL ulcer in 11 patients and due to varices in 2. In 2 patients, bleeding occurred within 24 h and in the remaining it occurred within 2 weeks after EBL. In those that bled, 3 met criteria for transfusion; 1 received FPP and 2 with low platelet did not receive transfusion; the remaining 10 patients did not meet criteria for transfusion. Patients that bled had higher MELD scores and most underwent secondary EBL compared to those that did not bleed (p = 0.01). **Conclusions.** The incidence of post EBL bleeding is low and correlates with advanced liver disease. There is no clear relationship between post-EBL bleeding, INR/platelet count, and prophylactic transfusion in the setting of outpatient EBL needs to be further evaluated.

P-103
ANEMIA IN CIRRHOTIC PATIENTS: RETROSPECTIVE ANALYSIS IN A SINGLE LIVER TRANSPLANT CENTER

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Introduction. Hematological abnormalities, such as anemia, are frequent in cirrhotic pa-tients. Anemia in cirrhosis is usually attributed to portal hypertension complications, such as variceal bleeding or portal hypertensive gastropathy (PHG). There are few reports about the causes and management of anemia in cirrhotics. **Objectives.** To describe clinical characteristics of anemic cirrhotics who were medically controlled in one center of liver transplantation. **Material and methods.** Observational and retrospective analysis of randomly selected cirrhotics controlled in one center of liver transplantation between 2016 to 2018, with diagnosis of anemia, defined by hemoglobin (Hb) lower than 13 mg/dL in men and 12 mg/dL in women. All patients included had recent upper gastrointestinal endoscopy or abdominal ultrasound. Statistical analysis with de-scriptive statigraphs, Mann-Whitney test and Welch's correction test. **Results.** 47 patients were included, age 59 (19-81) years old, 51% female sex. The predominant etiologies of cirrhosis were 45% non-alcoholic steatohepatitis (NASH), 21% autoimmune and 9% alcoholic. Child status were 60% B and 40% were C and MELD score was 14 ± 4.8. The Hb in men was 11 ± 1.5 (mg/dL) and 10 ± 1.3 (mg/dL) in women and VCM 97 ± 12 (mg/dL). Only 23% were evaluated with ferritin (150 [14-412] ng/dL), 19% transferrin (8 [10-147]) ng/dL) and 6% vitamin B12 or folate levels. 95% presented portal hypertensive gastropathy (PHG), that was severe in 67%. Severity of PHG was not associ-ated with Hb levels in men nor women. **Conclusion.** In our report, anemia is a frequent com-plication in cirrothic patients with Child B and C, concordant with other reports. In most patients, iron metabolism or other causes, were not studied. Severity of PGH was not associated with the severity of anemia. Future prospective and longitudinal studies about the causes of anemia in cirrhosis are required.

P-104
ACUTE-ON-CHRONIC LIVER FAILURE: SHORT-TERM MORTALITY IN PATIENTS OF A HOSPITAL OF PERU, 2016

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Introduction. Acute-on-Chronic Liver Failure (ACLF) is an acute event that is established on a chronic liver disease, which having a reversible characteristic with an opportune treatment, also has a high short-term mortality. **Purposes.** To determine the association between chronic liver failure (ACLF) and mortality in cirrhotic patients at the Arzobispo Loayza National Hospital (HNAL), Lima, Peru. **Material and methods.** Observational, analytical, cohort and prospective study. All patients diagnosed with decompensated liver cirrhosis who entered the hospital between December 2015 and June 2016 were followed up for 28 days. The dependent variable was the mortality in cirrhotic patients and the independent one was having ACLF. The CLIF-SOFA scale was used for the classification of the participants as ACLF. To evaluate the normality of the quantitative data the statistic of Shapiro Wilk was used. Survival curves and Fisher's Exact test were used in the analysis, the latter to evaluate the association between dependent and independent variables. **Results.** 46 patients were admitted in the period of the referred months; only 34 patients were accepted to be part of the study. The mean age was 63.12 ± 11.97. 52.94% (n = 18) were women. The percentage of cirrhotic patients with ACLF was 26.47% (n = 9). The most common cause of hepatic cirrhosis was non-alcoholic liver steatosis in 44.12% (n = 15), whereas in 29.62% (n = 9), bacterial infection was the major cause of hospitalization. There was an association between ACLF mortality and mortality in cirrhotic patients (p = 0.016) with a RR of 5.55 (95%: 1.32, 23.42). **Conclusions.** Patients with hepatic cirrhosis are more likely to die if they are classified as ACLF. The authors declare that they have no competing interests.

P-106
CLINICAL EVOLUTION OF PATIENTS WITH COMPENSATED LIVER CIRRHOSIS ACCORDING TO CONTROL OF THEIR ETIOLOGY

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Introduction. It is preached that the control of the etiology of cirrhosis is one of the factors to be taken into account in the survival of these patients. **Objective.** Given this hypothesis, the objective is to describe the evolution of cirrhotic patients in relation to the control of their etiology. **Material and methods.** A descriptive, retrospective and longitudinal study of patients with compensated cirrhosis was carried out from January 2000 to December 2012. 48 patients were included, with a mean follow-up of 6 years. 22 had control of its etiology. Among the most frequent causes of cirrhosis were autoimmune hepatitis and those caused by hepatitis C and B viruses. The main variables studied were the evolution of esophageal varices, spleen diameter, clinical status and greater complication-free survival. **Results.** The development of esophageal varices and enlargement of the spleen diameter were significantly related to the absence of control of the etiology of cirrhosis. Of the patients who had control of the etiology, 86.3% remained compensated. Of those who had no control of the cause, 57.7% evolved to decompensation. At 5 years, the survival free of major complications in patients with control of the etiology of cirrhosis was 95.5% and 84.3% in those without control. **Conclusions.** The greater complication-free survival in patients with compensated cirrhosis was attributed to the control of the etiology of cirrhosis.

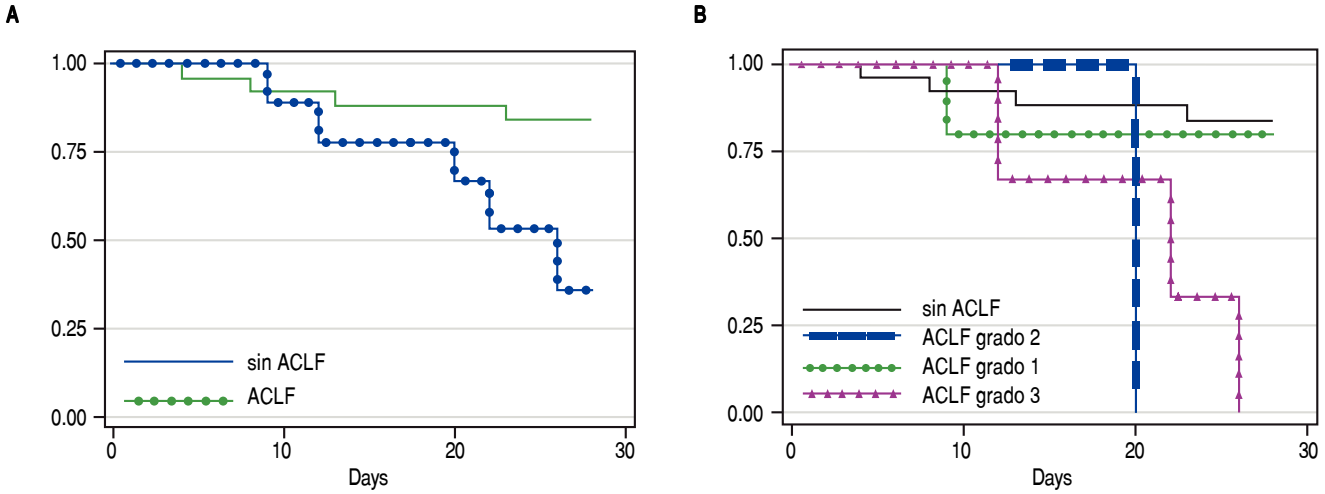

Figure 1 (P-104). *Survival curves of patients with and without ACLF.*

P-112
USEFULNESS OF TERLIPRESSIN AND ENDOSCOPIC LIGATION IN PATIENTS WITH UPPER GASTROINTESTINAL BLEEDING BY ESOPHAGEAL VARICES

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Introduction. The combination of terlipressin and endoscopic ligation is evaluated as the elective treatment of gastrointestinal bleeding due to esophageal varices. **Objective.** Given the possibility of reducing mortality and hospital stay with this guideline, the present study was proposed. The objective was to determine the usefulness of this treatment in variceal digestive hemorrhage. **Material and methods.** A comparative, prospective study was conducted in patients with variceal digestive hemorrhage from January 2015 to June 2017. 21 patients were included. The results were compared with a historical control group of 24 patients where somatostatin and endoscopic ligation were used. The variables studied were age, sex, the etiology of cirrhosis, the degree of liver failure, treatment failure, transfusion requirements, mortality at 6 weeks and hospital stay. **Results.** In both groups the female sex predominated and the behavior of the age was similar. Viral etiology was the most frequent, as was Child-Pugh stage B. Compared with the control group, the treatment failure and the transfusion requirement were lower. Two patients (9.6%) of the study group died *vs.* 6 (25%) of the control group. The hospital stay was shorter in the study group. There was no significant relationship for treatment failure, mortality and hospital stay. **Conclusions.** The combined treatment is useful in variceal digestive hemorrhage. There was no significant relationship between the groups in relation to mortality and hospital stay.

P-114
TRANSIENT ELASTOGRAPHY FOR LIVER FIBROSIS ASSESSMENT: DIAGNOSTIC CONCORDANCE OF TWO DEVICES AVAILABLE IN CHILE

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Introduction. Transient elastography (TE) is a non-invasive method that quantifies liver fibrosis (LF). In Chile there are two TE devices available, but there are no reports that evaluate the diagnostic concordance between both. **Objective.** To evaluate diagnostic concordance between two TE devices in patients with chronic liver disease (CLD). **Marterial and methods.** 57 patients with CLD were prospectively included, 54% were women, 55 ± 13 years old. CLD etiologies: 33% non-alcoholic fatty liver disease, 26% autoimmune, 18% hepatitis C virus (HCV). In all patients, LF was measured on the same day and by only one operator with two TE devices: Fibrotouch® HISKY/FT1000 and Fibroscan® Echosens 502Touch. Subjects were grouped according to LF severity: group 1 with mild or no LF (F0 or F0/F1); group 2 with moderate LF (F1, F2, F2/F3 or F3) and group 3 with advanced LF (F3/F4 or F4). Diagnostic concordance was evaluated by weighted kappa index (κ), taking as reference a good concordance $\kappa = 0.61\text{-}0.8$ and almost perfect $\kappa = 0.81\text{-}1.0$. **Results.** Global concordance was 89%, $\kappa = 0.74$ ($p < 0.001$), Group 1 highlights with 82% concordance, $\kappa = 0.66$ ($p < 0.001$); and group 3 with 91% concordance, $\kappa = 0.76$ ($p < 0.001$). In HCV patients, global concordance was 90%, $\kappa = 0.83$ ($p < 0.002$); in group 1 concordance was 100%, $\kappa = 1.0$ ($p < 0.003$); and group 3 concordance was 80%, $\kappa = 0.62$ ($p < 0.001$). **Conclusion.** Our study shows a good diagnostic concordance between both TE devices available in Chile for LF assessment. The highlights are in HCV patients, where concordance is almost perfect in the group without or mild LF.

P-118
MANAGEMENT OF PORTAL THROMBOSIS IN CIRRHOTIC PATIENTS CONTROLLED IN ONE TRANSPLANT CENTER IN CHILE

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Introduction. Portal thrombosis (PT) is one of the frequent complications in patients with decompensated cirrhosis. PT is characterized by the formation of a thrombus within the main trunk of the portal vein and/or its intrahepatic branches. The presence of PT might be associated with higher incidence of complications in cirrhotic patients. **Objectives.** To describe the characteristics of cirrhotic patients with PT and therapeutic management in one transplantation center in Santiago, Chile. **Material and methods.** Observational and retrospective study. Clinical records, laboratory parameters and images of cirrhotics with PT, confirmed by computed tomography or magnetic resonance imaging, were review in a single liver transplant center. Statistical analysis with descriptive statistics. **Results.** 19 cirrhotics with PT were included, age 61 (43-73) years, 53% female sex. The predominant etiologies of cirrhosis were 47% non-alcoholic steatohepatitis liver (NASH), 16% autoimmune and 11% alcohol; MELD score 14 (8-40), 37% were Child B and 63% were Child C. Frequent comorbidities were overweight or obesity (70%), diabetes mellitus (63%) and arterial hypertension (53%). Regarding the diagnosis, 84% were performed with abdominal CT. 58% exhibited manifestations attributable to PT: 89% had esophageal varices (16% with history of bleeding), 68% ascites and 57% hepatic encephalopathy; 59% presented partial involvement of the portal vein and 68% received anticoagulation. **Conclusion.** PT without symptoms was frequent in our group. The main cause of cirrhosis was NASH, concordant with recent reports. Anticoagulation is the treatment of choice, but 32% of patients are managed without it. Prospective and longitudinal studies are needed to know the benefits of anticoagulation and the impact on hepatic decompensation.

Table 1 (P-121). Comparison of patients according to their natremia values and their Child Pugh score (N 155).

	Na < 130 mEq/L		Na 130-135 mEq/L		Na >135 mEq/L	
Child Pugh A	2/34	6%	6/34	18%	26/34	76%
Child Pugh B	10/85	12%	28/85	33%	47/85	55%
Child Pugh C	6/36	17%	14/36	39%	16/36	44%

P-121
HYPONATREMIA AS A FACTOR OF POOR PROGNOSIS IN PATIENTS WITH CIRRHOSIS

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Introduction. Hyponatremia, as well as low blood pressure, increased serum creatinine and low urine sodium, are independent predictors of poor prognosis in patients with cirrhosis, not usually included in the most commonly used prognostic scores. **Objective.** To determine the relationship between the degree of hyponatremia and the functional stage of patients with cirrhosis. **Material and methods.** an observational, analytical, cross-sectional, cases and controls design was applied of patients diagnosed with cirrhosis that came to the office of our department from January 2014 to August 2017. Natremia and Child Pugh score were evaluated at the time of the first consultation. The patients were grouped according to their natremia in: group 1 (sodium < 130 mEq/L), group 2 (sodium 131-135 mEq/L) and group 3 (sodium > 135 mEq/L). Patients with hyponatremia (Groups 1 and 2) were compared with group 3 according to their functional stage (Child Pugh). **Results.** 155 patients diagnosed with cirrhosis were included. Sodium < 130 mEq/L was found in 11.7% (18/155) patients, sodium 131-135 mEq/L in 30.9% (48/155) and sodium > 135 mEq/L 57.4% (89/155). 22% (34/155) were in Child Pugh A stage, 55% (85/155) in stage B and 23% (36/155) in stage C (Table 1). When comparing patients with hyponatremia in the same functional stage, observed a higher frequency of hyponatremia in patients with Child Pugh C. 42.6% of patients (66/155) had hyponatremia, of which 13% (20/155) was in stage C and 5% in stage A (OR 4.64, 95% CI, 1.62-13.16, p = 0.007). **Conclusion.** When comparing patients with normal serum sodium and hyponatremia in the different functional stages of cirrhosis, it is observed that there is an increased risk of hyponatremia the more advanced the functional stage of the patient.

P-124
COMPLICATIONS OF CIRRHOSIS THAT REQUIRE HOSPITAL ADMISSIONS IN A PARAGUAYAN TERCIARY CENTER

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Introduction. Liver cirrhosis is a chronic disease characterized by a compensated practically asymptomatic phase followed by a decompensated phase, marked by clinical signs and complications of the disease, that frequently require hospital admissions. Complications of cirrhosis not only impair quality of life but also decrease survival of these patients. **Objetives.** To establish the most frequent complications of cirrhosis that require urgent hospital admission. **Material and methods.** Observational, descriptive study. We retrospectively examined the inpatient datasets of our Hospital in the period from July 2016 to July 2017. The study included patients who were admitted due to specific complications of liver cirrhosis. We used and Excell spreadsheet to gather data. The variables were expressed in frequency, mean and percentage. **Results.** 69 cirrhotic patients were admitted because of complications of the liver disease. 49 (71%) were male; the average age was 58 years, range 24 to 81. The most frequent causes of hospital admissions were ascites (39%); variceal bleeding (35%) and encephalopathy (17%). 3 patients had spontaneous bacterial peritonitis, 2 had acute kidney failure and 1 had acute on chronic liver failure. The etiology of cirrhosis was alcoholism in 49%, cryptogenic in 17%, viral hepatitis (B and C) in 15%, autoimmune hepatitis in 7%, NAFLD in 6%, PBC in 4%, Wilson disease in 1%. **Conclusion.** The most frequent complications of cirrhosis that require hospital admission were ascites, variceal bleeding and encephalopathy. Most patients were male, with an average age of 58 years. Practically half of the patients were cirrhotic because of alcoholism.

P-125
IDENTIFICATION OF RISK FACTORS RELATED TO THE DEVELOPMENT OF POST-PARACENTESIS ABDOMINO-PERITONEAL FISTULA

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Background. Paracentesis is used in cirrhotic patients with grade III ascitis or tension, which includes a therapeutic and a diagnostic part, the procedure is not free of complications since 1% develop abdomino-peritoneal fistula after paracentesis (FPP), the factors that influence their development are not yet described. **Objectives.** Identify the risk factors of patients who develop FPP. **Material and methods.** Observational, retroactive, descriptive and analytical study of patients hospitalized for tension ascites who underwent diagnostic paracentesis and/or evacuation from February to May 2018. The cases were patients who developed FPP and controls those who did not develop FPP. Statistical analysis: Descriptive statistics, qualitative variables were summarized by frequencies and percentages and quantitative variables as mean + SD. To compare between groups, for dichotomous variables χ^2 or Fisher's exact test was used, and for quantitative Student's t variables. **Results.** Thirty-five cases that entered specifically for diagnostic and/or evacuation paracentesis were analyzed; 20 (57.1%) were men; the age 55.2 + 11.5 years. Regarding the etiology, cirrhosis predominated (30 cases): 15 (42.9%) alcohol, 4 (11.4%) non-alcoholic steatohepatitis, 5 (14.3%) chronic hepatitis C, 6 (17.1%) origin in study; and 5 cases (14.3%) ascites of non-cirrhotic origin in the study. Of the cirrhotic patients 25 (71.4%) were Child C and 5 (14.3%) Child B. All the patients who developed fistula were cirrhotic (11 patients -31.4% -). **Conclusions.** Factors related to the procedure that influence the development of fistulas are: the puncture site, number of attempts, paracentesis performed by a non-gastroenterologist. Factors related to the patient were: high abdominal fat measured by plicometry, as well as overweight BMI, which had statistical significance.

P-127
CONCORDANCE OF TRANSIENT ELASTOGRAPHY AND PSWE FOR MONITORING LIVER STIFFNESS IN PATIENTS WITH LONG TERM PARENTERAL NUTRITION

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Background. Measurement of elastography in assessing liver damage in patients undergoing home parenteral nutrition (HPN) has been little explored in literature. Liver stiffnes measurement (LSM) is most related to fibrosis, but process that alters hepatic viscoelastic properties can affect liver stiffness (LSM). Our aim was to compare the new S-Shearwave (pSWE) method with standard Transient Elastography (TE) as a method to evaluate LSM. **Material and methods.** 16 consecutive patients on

Tabla 1 (P-125).

Characterized evaluated	Cases that presented FPP (n = 11)	Controls without FPP (n = 24)	P
Presence of stretch marks	6 (54.5)	2 (8.3)	0.006
History of previous abdominal surgery (s)	3 (27.3)	2 (8.3)	0.30
Puncture site (FID)	9 (81.8)	0 (0)	< 0.0001
Two or more puncture attempts for paracentesis	10 (90.9)	0 (0)	< 0.0001
Previous story of having presented FPP	3 (27.3)	0 (0)	0.03
Paracentesis performed by doctor			
NO gastroenterologist (emergencies or internal medicine)	9 (81.8%)	4 (16.7)	< 0.0001
Heavy gauge needle (16 or less)	3 (27.3)	1 (4.2)	0.08
Abdominal panniculus panclicometry (mm)	34.1 ± 6.7	21.5 ± 4.5	< 0.0001
Amount of drained ascites (Liters)	6.5 ± 4.5	6.1 ± 5.3	0.84
Weight (kg)	74.3 ± 7.3	63.4 ± 7.5	< 0.0001
Size (M)	1.61 ± 0.06	1.60 ± 0.07	0.75
IMC (kg/m^2)	28.8 ± 2.4	24.8 ± 2.1	< 0.0001
Age (years)	54.8 ± 13.5	55.4 ± 10.7	0.89

The qualitative variables are expressed in n (%). The quantitative variables are expressed as mean ± DE. A value of P < 0.05 was considered statistically significant.

HPN (median duration 31 months; range 11-133) underwent pSWE and TE on the same day. The median age was 37 years (18-53), 11/16 (68.7%) were male, with BMI 21.2 Kg/m^2 (17.8-26.9). Indication for HPN was short bowel disease (chronic mesenteric ischemia n = 4; chronic intestinal pseudobstrution n = 2; Crohn's disease n = 3; complications of bariatric surgery n = 4; volvulus n = 3). At baseline the median ALT value was 57 IU/L (18-178), GGT 56 IU/L (16-838), alkaline phosphatase 129 IU/L (70-360), albumin 4 mg/dL (3.3-5.1), ferritin 183 ng/dL (11-3193), and size of right lobe measured 142mm (118-175). LSM obtained by TE were used for the assignment of hepatic fibrosis stage in accordance with the reference values provided by previous robust studies. The same methodology for TE was applied to pSWE. Lin's Concordance Correlation Coefficient (CCC) and Bland-Altamn tests were applied. Kappa index verified the agreement with qualitative measurements and Spearman test was used. **Results.** The median pSWE and TE stiffness values were 5.9 kPa (3.6-15.7) and 6.6 kPa (3.5-20.9) respectively. Concordance rate between TE and pSWE was 0.7101 and an optimal accuracy was obtained, Cb = 0.9732. Bland-Altman test showed lower variability when values were ≤ 12 kPa. High concordance rate was attained between the elastographic methods, with a Kappa index of 0.862(p value < 0.0005). **Conclusion.** The pSWE presented high concordance rate with TE in Home Parenteral Nutrition patients.

P-129
INCIDENCE AND CHARACTERISTICS OF INFECTIONS IN ACUTE-ON-CHRONIC LIVER FAILURE (ACLF) AND ASSOCIATION WITH MORTALITY

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Introduction. Infections are highly associated to Acute-on-Chronic liver failure in cirrhotic patients; acting as a precipitating factor, and as a complication of this syndrome. **Aims.** To asses: 1) The incidence and characteristics of infections in ACLF, 2) The impact of infection as a precipitating event of ACLF. **Material and methods.** Observational, prospective and unicentric study. Hospitalized cirrhotic patients with ACLF (according to CLIF-C OF score) were included. They were divided in: 1) Group1: ACLF precipitated by infections; 2) Group2: ACLF precipitated by other events. We assessed the incidence of infections in ACLF and compared the outcomes of both groups. Finally, we made a transplant-free survival analysis at 30-day according to precipitating event. **Results.** 49 patients with 53 ACLF episodes were included. Average age: 62.7 years, Males: 65.3%. Main precipitating events were: infections (56.6%), gastrointestinal bleeding (11.32%), alcohol (7.55%), nephrotoxic drugs (7.55%), large-volume paracentesis (5.66%) and surgery (1.89%). Incidence of global infections was 90.56%; and 14.58% were secondary to multidrug-resistant bacteria. Most patients of group 2 (78.6%) developed infections later. Infections were nosocomial in 42.55%, community-acquired in 34.04% and healthcare-associated in 23.4%. According to localization: Urinary (50%), pneumonia (31.25%), SBP (16.6%) and bacteremia

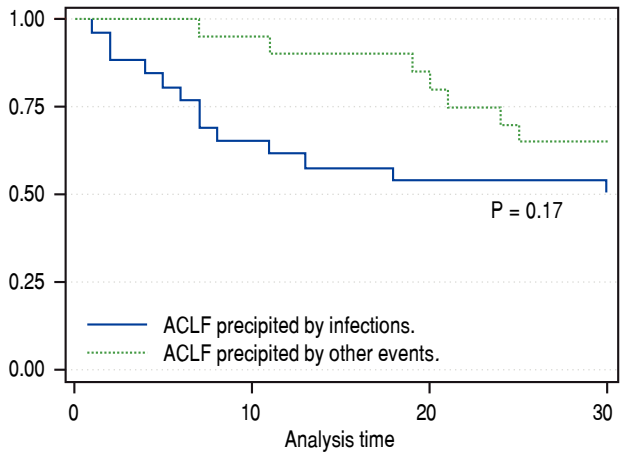

Figure 1 (P-129). *Kaplan-Meier curve: Transplant-free survival at 30-day according to precipitating event of ACLF.*

(8.33%). When we compared Group 1 and 2: In-hospital mortality (40.74% *vs*. 31.8%; p = 0.33 CI:95%), and 30-day mortality (48.14% *vs*. 36.36%; p = 0.38 CI:95%) were higher in Group 1 but without statistical significance. Transplant-free survival at 30-day was similar in both groups (p = 0.17). **Conclusions.** Infections are highly associated to ACLF, acting as a precipitating factor and as a complication. Severity, in-hospital and 30-day mortality, and transplant-free survival are similar in ACLF precipitated by infections in comparison to other precipitating events; probably secondary to the high prevalence of infections in this group.

P-130
RESULTS OF ESOPHAGEAL ENDOPROSTHESIS SX-ELLA DANIS IN THE TREATMENT OF ACUTE VARICEAL BLEEDING

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Introduction. Hemorrhage from esophageal varices is a serious and life-threatening complication in patients with liver cirrhosis. Treatment of choice is early administration of vasoactive drugs (terlipressin or somatostatin) together with endoscopic treatment (sclerosis or rubber band ligation). With this therapy, hemorrhage control is achieved in most patients, but treatment fails in 10-20% of cases, which increases mortality. To overcome these failures we can try a second endoscopic treatment, balloon tamponade, TIPS or even surgery, but these procedures are not available in all centers. Expanded metal oesophageal coated stents (SX-Ella Danis), designed specifically for the control of oesophageal varices bleeding, are safe and easy to place and can offer a bridge to other treatment options. **Aim.** To evaluate the experience in our hospital with the use of SX-Ella Danis prosthesis in the management of esophageal variceal bleeding. **Material and methods.** In our hospital, between January

2012 and December 2017, 8 cirrhotic patients with acute variceal bleeding not controlled with standard therapy were treated with an oesophageal stent SX-Ella Danis. **Results.** All patients were male, with a median age of 54 years (48-83). 5 patients had good liver function and 3 were Child B. Six of them had failed treatment with band ligation or sclerotherapy, while in two the stent was placed as first treatment. Two patients had a history of previous variceal hemorrhage and one had undergone resection of hepatocellular carcinoma 11 months earlier. Hemorrhage was controlled in all but one cases, with no complications arising from the procedure; in five of them an early TIPS was placed afterwards. The patient in whom Danis failed died in the first hours. Two other patients died, one due to septic shock three weeks later and the other one due to myelodysplastic syndrome one year after the episode of bleeding. A patient was transplanted 6 months later and after 2 years he is doing well. Four patients remain in follow-up, between 26 and 54 months later (mean 42.25 months), and they are all stable, without new decompensation of their liver disease. **Conclusions.** Danis self-expanding coated metal prostheses are an effective alternative for the management of hemorrhage due to refractory esophageal varices in those patients in whom the standard treatment fails. Its placement is not technically difficult and is associated with few complications. It can be a very useful therapeutic alternative as a bridge to the definitive treatment.

P-138
SPLEEN ELASTOGRAPHY AS A PREDICTOR OF ESOPHAGEAL VARICES

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Introduction. According to international guidelines, all patients with cirrhosis should be performed upper gastrointestinal endoscopy at the time of diagnosis, as esophageal varices screening, 40% have esophageal varices, thus 60% of patients underwent invasive procedures unnecessarily. **Objectives.** To evaluate the performance of splenic elastography to detect patients with high-risk esophageal varices. **Material and methods.** We included 40 patients with a recent diagnosis of cirrhosis, who were evaluated with Doppler portal ultrasound, hepatic elastography, splenic elastography, endoscopy and who met the following criteria: no history of gastrointestinal bleeding, no treatment with beta-blockers, no portal thrombosis. A cross-sectional, unicentric study was conducted from August 2018 to April 2017. The comparison with the standard included the use of chi square and obtained ROC curves to present sensitivity and specificity data. **Results.** Elastography proved to be a good predictive study of the presence of esophageal varices (AUC 0.84; CI 95%: 0.71-0.97), followed by spleen diameter (AUC 0.82; CI 95%: 0.67-0.97), while the congestivity index (AUC 0.46; CI 95%: 0.28-0.64) and hepatic elastography (AUC 0.41; CI 95%: 0.22-0.60) were the parameters with less precision, the cutoff point of 3.8 m/sec in the splenic elastography was able to identify high risk varices with a sensitivity of 88.8%. **Conclusion.** Splenic elastography is a fast, accessible and safe method that provides a good performance to diagnose high risk esophageal varices, superior to hepatic elastography and can help to prioritize and select the appropriate patients for upper endoscopy or initiation of prophylactic treatment, decongesting endoscopic centers.

P-142
NEW COGNITIVE FUNCTIONS FOR DETECTION OF MINIMAL HEPATIC ENCEPHALOPATHY?

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Background. Psychometric Hepatic Encephalopathy Score (PHES) is used to detect Minimal hepatic encephalopathy (MHE). The five tests comprising PHES are mainly used to assess attention-concentration, motor precision, motor speed, visuospatial orientation and visual construction. Other test include also used to assess MHE are Inhibitory control test, Stroop test (EncephalApp Stroop) and Animal naming test. Reported cutoffs among test and populations varied widely. Is there a limit of cognitive domains impaired and, how many test are useful to detect MHE? **Objective.** To identify new cognitive functions impaired in cirrhotic patients with MHE beside the cognitive test assessed by PHES. **Material and methods.** 71 patients with liver cirrhosis (56.3%, women) 50 ± 11.3 years old, who attended the Gastroenterology Service of the General Hospital of Mexico. Using PHES criteria (-4SD) patients were classified in MHE and non-MHE. Neuropsi is a battery to assess seven cognitive domains with standards for the Mexican population. U-Mann Whitney tests were performed between cognitive domains. A value of $p < 0.05$ was considered significant. **Results.** Significant association was found between PHES and Neuropsi to detect MHE and cognitive impairments, χ^2 (1) = 5.15, p = 0.023. Accordingly to PHES, 42 patients with MHE were detected (59.2%). In patients with MHE impairment in several domains were found: attention (p = 0.025) and concentration (p = 0.001); language (denomination, p = 0.035, comprehension, p = 0.03); visual abilities (coding, p = 0.005; evocation, p = 0.048); executive functions (conceptual p = 0.006 and motor functions p = 0.037). **Conclusions.** In patients with MHE, the Neuropsi battery coincides with PHES in motor and perceptual impairment. One test and at least two more cognitive domains impaired in patients with MHE were found. Should we look for more? **No conflict of interests.** This work has been totally subsidized by funds from CONACYT project 234269.

P-148
USE OF FIBROSCAN IN EVALUATING THE SEVERITY AND PROGNOSIS OF LIVER DISEASE IN CUBAN PATIENTS

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Introduction. In Cuba liver cirrhosis oscillates between the ninth and tenth causes of death, so it is necessary to identify the degree of fibrosis in patients with liver diseases to carry out therapeutic interventions on the different etiologies. **Objectives.** To evaluate the reliability of the elastography technique performed at the Institute of Gastroenterology; identify the main entities to which this test is indicated; to identify the degree of fibrosis of patients according to various etiologies and the cutoff point of appearance of signs of portal hypertension in patients with hepatic cirrhosis. **Material and methods.** A descriptive and transversal study was conducted at the Institute of Gastroenterology in Cuba, in the period from December 2013 to 2016. The sample was made up of 1203 patients of both sexes, aged between 17 and 89 years. The study was carried out with the team of FibroScan 402. The ROC curve was built and the cutoff point was chosen. **Results.** The main indication for elastography was chronic hepatitis C virus (57.8%), chronic hepatitis B (20.6%). 94.9% of liver elastography was successful. 57% of patients who underwent hepatic elastography had a degree of F1 fibrosis. 92.8% of the patients were correctly classified. The predictive value found was greater than 95%, so that patients who were performed hepatic elastography with a median of hepatic rigidity greater than 17 KPa are likely to present some sign of hypertension portal. **Conclusions.** The main indications of Elastography in the Institute of Gastroenterology were chronic hepatitis C and B. The found cut value achieved a good discriminatory ability for the determination of signs of portal hypertension from median hepatic elastography.

P-151
ALFA-1 ANTITRYPSIN DEFICIENCY, A COMMONLY MISSED CAUSE OF CHRONIC LIVER DISEASE IN THE ADULT: PRESENTATION OF 9 CASES WITH REVIEW OF CURRENT LITERATURE

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Introduction. Alfa 1-antitrypsin (a1AT) deficiency is one of the most prevalent genetic diseases in the human being, sadly it is not a commonly suspected clinical entity. With more than 100 known mutations, those associated with hepatic disease are the Z homozygote allele mutations in the gene a1AT which occur in every 2,000-3,500 births, thus the gold standard for diagnosis consists in the genetic testing. **Case report.** We present 9 cases of confirmed a1AT deficiency, from different ages ranging from adolescence through elderly patients. Each of one of them with different clinical presentation going from asymptomatic liver enzyme elevations to transplanted cirrhosis in which the diagnosis was post procedural. We review the most relevant literature of the topic up to date and comment about the management of the chronic liver disease and the evolution of these patients through time in the liver clinics of their respective centers. **Discussion.** Opposing to the pulmonary disease, in which the sequelae are caused by the deficit of this protein, which in turn fastens the enzymatic destruction of the airway microstructure, the hepatic compromise is secondary to the intracellular accumulation of the aberrant misfolded protein. This accumulation causes cellular damage, hepatitis, fibrosis, cirrhosis and hepatocellular carcinoma through activation of a series of mechanisms which culminate in hepatocitary apoptosis, regeneration and chronic cellular injury. **Conclusion.** a1AT deficiency is a commonly missed cause of chronic liver disease with protean manifestations through the course of the disease. Even though there is no clear medical treatment up to date for this condition, it should be a suspected clinical entity in order to maintain these patients as compensated as possible, in order to improve life quality and be the objective of future research. **Conflicts of interest.** None.

P-158
CORRELATION BETWEEN COMORBIDITIES AND LEVELS OF IGF 1 PATIENTS WITH CIRRHOSIS

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Introduction. Growth factor similar to insulin type 1 (IGF-1) is considered a hepatocellular functional reserve biomarker in liver cirrhosis (CH). Low levels of IGF-1 have been associated with diabetes mellitus (DM), chronic renal failure (CRF) and hypothyroidism (PH), in non-cirrhotic patients, not knowing the influence that these comorbidities exert on the levels of IGF1 in cirrhotic patients. **Objetive.** To determine the correlation between comorbidities and IGF 1 levels in liver cirrhosis. Hypothesis: Comorbidities influence IGF 1 levels in liver cirrhosis. **Material and methods.** This is a non-experimental, cross-sectional, relational study with a cohort of 46 cirrhotic patients admitted to the Gastroenterology Service of the "Dr. Teodoro Maldonado Carbo" (HTMC). IGF 1 was quantified in heparinized plasma with the IMMULITE 2000 IGF-I method. The subjects were categorized into 4 groups according to the percentages of decrease of IGF-1, group 1 (lower 25%), 2 (25% -50%), 3 (50% -75%), 4 (highest 75%). The comorbidities to be studied were: DM (41.3%), HP (10.9%), CRI (6.5%). For the statistical analysis, the IBM SPSS program was used. **Results.** The mean age was 63 ± 10 years, 58.7% were males, 26.1% were Child P. A, 43.5% B, and 30.4% C. The distribution according to comorbidities was as follows (Table 1). **Conclusion.** diabetes mellitus, hypothyroidism and chronic renal failure did not influence the levels of IGF 1 in cirrhotic patients. Therefore IGF 1 could be used as a stable biochemical marker of hepatic reserve.

P-161
ECONOMIC IMPACT OF DECOMPOSED HEPATIC CIRRHOSIS

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Introduction. Liver cirrhosis is a chronic disease with great impact on health services due to its family and social costs. There is not much information in Ecuador about the costs that demand their attention. **Aim.** To estimate the annual cost of care for hospitalized patients and non- hospitalized patients with decompensated cirrhosis at the "Dr. TMC". **Materials and methods.** We used a cohort of 271 patients distributed in two groups. Group 1 belonging to 151 cirrhotic patients who were attended at the external consultation and group 2, 120 patients hospitalized for decompensation of their cirrhosis. In this group the type of decompensation, ascites (As # 45), digestive hemorrhage (variceal HD # 37), space-occupying lesion (LOE # 20), encephalopathy (E # 18) was being evaluated. In both groups the use of hospital resources was determined in a period of one year. For the calculation of costs, the Tariff of Benefits of the Ecuadorian National Health System version 2014 was used, and for the costs of drugs, reference prices of the institution were

Table 1 (P-158).

Comorbidity	Decrease range					p value
	Group 1	Group 2	Group 3	Group 4	Total	(<0.05)
Diabetes	5	5	6	3	19	0.09
Hipothyroidism	2	1	0	2	5	0.45
Chronic renal failure	0	0	1	2	3	0.53

Table 1 (P-161).

	Child P.	Population	Average cost/patient	Total cost/year
Group 2	A	9	$ 5.977.15	$ 1´215,864.07
	B	66	$ 10.497,58	
	C	45	$ 10.427,30	
Group 1	A	111	$ 835.68	$ 113,823.58
	B	33	$ 528.89	
	C	7	$ 515.68	

used. The SPSS® Statistics version 23 program was used for the statistical study. **Results.** The total annual direct cost was $1'329,687.65, while the average costs due to decompensation were: As $13,549.33; variceal HD $7,668.47, LOE $6,637,541, E $11,961.90. When evaluating costs according to the highest degree of liver deterioration calculated by the Child Pugh we found the following values (Table 1). **Conclusions.** The cost of Cirrhosis is high. a-Costs will increase as the disease progresses. b-Between stage B and C there were no differences. c-We suggest, patients with stage B and C should be sent to the transplant unit.

P-163
COMPLICATIONS OF ENDOSCOPIC RETROGRAPHY CHOLANGIOPANCREATOGRAPHY (ERCP) IN PATIENTS WITH LIVER CIRRHOSIS

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Background. The frequency of choledocholithiasis in cirrhotic patients is 3 times higher than in non-cirrhotic patients. Post-ERCP complications in the general population and in some subgroups of patients have been widely evaluated. **Aim.** To evaluate the safety and efficacy of ERCP for CBD in liver cirrhotic patients and to determine risk factors, rate and type of complications. **Material and methods.** Data was retrospectively analyzed, 796 ERCP performed in Ecuador between 2013 and 2017. In total, 102 consecutive cirrhotic patients with choledocholithiasis who underwent ERCP for the first time were enrolled in this study. The success rates of selective biliary cannulation, number of ERCP procedure for stones extraction and complications. We evaluated the ability of Child–Pugh classification scores to predict the outcomes in the cirrhotic patients. **Results.** The success rate of selective biliary cannulation was 95.6% in liver cirrhotic patients versus 97% in non-cirrhotic. The bile duct clearance rate was 87% in cirrhotic patients *vs.* 96% in non-cirrhotic patients. Complications occurred in 24 procedures (24.4%): hemorrhage in 19 patients (79.1%), of these 1 was Child A, 5 Child B, and 13 were Child C. Acute Pancreatitis in 1 patient (4.1%), cholangitis in 4 patients (16.6 %). The main risk factor associated with the development of complications was endoscopic sphincterotomy. The hemorrhage rate after ERCP in non-cirrhotic patients was 1%. The hemorrhage rate associated with ERCP in Child-Pugh C patients was significantly higher (18.6%) than (1%) in non-cirrhotic patients. **Conclusion.** The complication rate of ERCP in patients with underlying liver cirrhosis was 24.4%, mainly manifested as hemorrhage (79.1%) and more common in patients with Child C status. ERCP is a safe and effective treatment for Child-Pugh A and B cirrhotic patients with common bile duct stones.

P-167
CHANGE IN THE MICROBIOLOGY OF SPONTANEOUS BACTERIAL PERITONITIS

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Background. Spontaneous bacterial peritonitis (SBP) is a serious and frequent infection in patients with portal hypertension. It has been reported that the main cause are Gram-negative bacilli. **Aim.** To evaluate the microbiology of ascitic fluid in patients with SBP. **Material and methods.** Retrospective study of ascitic fluid with cytological and bacteriological study in 94 patients diagnosed with SBP between 2012 to 2017. **Results.** 59% presented culture-negative neutrocytic ascites and 41% was culture-positive for SBP, of which 95% corresponded to bacteria: 52% gram-positive bacteria and 48% gram-negative bacteria. In two patients (5%) fungi were isolated. 31% of patients with positive culture were in prophylaxis with ciprofloxacin, with 100% resistance to this antibiotic. In this group of patients, 67% gram-positive were isolated compared to 41% of those without prophylaxis (p: ns). The microorganisms most frequently isolated were extended-spectrum beta-lactamase producing *Escherichia coli* (17%), *Enterococcus faecium* (13%), *Coagulase staphylococcus* negative (13%), multisensible *Escherichia coli* (8%) and *Pseudomonas aeruginosa* (8%). **Conclusion.** 41% of SBP had positive culture, being the main etiology Gram positive bacteria. Prophylaxis with ciprofloxacin was associated with SBP due to microorganisms resistant to this antibiotic and a tendency to present more Gram positive infections. This information should be considered when empirically choosing antibiotics in patients with SBP.

P-168
PRESENCE OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN CIRRHOTIC PATIENTS

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Background. In cirrhosis, intestinal dysbiosis, including small intestinal bacterial overgrowth (SIBO), has been described as one factor for progression of hepatic fibrosis. For the diagnosis of SBI, breath test (BT) is used for to measure the concentration of hydrogen produced by bacteria in the intestinal lumen. **Aims.** To evaluate the presence of SIBO and the association with gastrointestinal symptoms in cirrhotics with indication of BT. **Material and methods.** 103 cirrhotic patients were included, 81% female sex, age 59 ± 15 years old. BT was performed with standardized lactulose technique for 180 minutes, with samples every 10 minutes. SIBO was considered when at least two measures were 20 ppm above the baseline in the first 60 minutes and orocecal transit time (OCTT) the time elapsed between the beginning of the test and the of beginning of the curve elevation over 20 ppm. Each patient met a questionnaire of digestive symptoms: pain, bloating, diarrhea and constipation. Statistical analysis with χ^2 and Mann-Whitney Test

($p < 0.05$). **Results.** SIBO was detected in 43% cirrhotics (41 patients), no differences by sex or body mass index. In cirrhotics with SIBO, 89% had abdominal distension ($p = 0.41$), 84% abdominal pain ($p = 0.38$) and 36% diarrhea ($p = 0.54$), without significant differences according to SIBO. No differences were found regarding comorbidities, drug use and OCTT between cirrhotics with and without SIBO. **Conclusion.** There is a high frequency of SBI in cirrhotics similar other reports. The presence of SIBO is independent of digestive symptoms and should be evaluated directly with BT lactulose. Prospective studies evaluating the importance of intestinal dysbiosis in the progression and the development of spontaneous bacterial peritonitis and hepatic encephalopathy are required.

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NON ALCOHOLIC FATTY LIVER DISEASE. MAIN ETIOLOGY OF CIRRHOSIS IN PATIENTS WITH CARCINOMA HEPATOCELLULAR IN TWO HOSPITALS OF SANTIAGO, CHILE

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Introduction. Carcinoma hepatocellular (CHC) is one of the main causes of death in patients with cirrhosis. There is a significant increase in non-alcoholic fatty liver disease (NAFLD) in patients with CHC. Information about prevalence and risk factors for CHC in Chile is scarce. **Objectives.** To determine the changes in the etiology of cirrhosis in patients consulting for HCC between 2000 and 2018 in two hospitals in Santiago. As secondary objectives, changes in tumor characteristics and stage at diagnosis were evaluated. **Material and methods.** Observational, descriptive study. The records of 288 patients were reviewed. The characteristics of the patients diagnosed between the year 2000-2009 and the year 2010-2018 were compared. The staging was carried out according to the Barcelona classification (BCLC). **Results.** Average age of 65.5 + 10.4 years; 66% men; 22% of patients had Diabetes Mellitus. The main etiology of cirrhosis was NAFLD (38.8%), chronic hepatitis C virus (HCV), (25.8%) and alcohol-related liver disease (ALD), (21%). When comparing the periods 2000-2009 and 2010-2018, there was an increase in NAFLD (χ 8.5, p: 0.003) and decrease in ALD (c^2 7.8, p: 0.005). There was no change in the prevalence of HCV. There was a decrease in the proportion of patients diagnosed in advanced stages (C and D), χ^2: 13, p: < 0.001, in the period 2010-2018; an increase in intermediate stage (B), χ^2: 4.8, p: 0.03 and no changes were observed in the diagnosis in early stages (0 and A). **Conclusion.** NAFLD as etiology of cirrhosis in patients with HCC has significantly increased. The percentage of patients diagnosed in advanced stages has decreased, but the diagnosis in early stages has not increased.

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MICROBIOLOGICAL PROFILE OF SPONTANEOUS BACTERIAL PERITONITIS IN PATIENTS HOSPITALIZED WITH DIAGNOSIS OF HEPATIC CIRRHOSIS AND ASCITIS IN THE GASTROENTEROLOGY SERVICE AT HOSPITAL EUGENIO ESPEJO, QUITO, ECUADOR

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Introduction. Bacterial spontaneous peritonitis (BSP) is defined as ascites fluid infection that occurs in the absence of an apparent intraabdominal infectious site, with a prevalence of 30% in hospitalized cirrhotic patients with ascites. **Objectives.** The present study aims to know the microbiological profile of patients with BSP and to determine the best cost effective treatment. **Material and methods.** This is an epidemiological, analytical, cross-sectional study that includes patients diagnosed with cirrhosis with ascites, admitted in the Gastroenterology Unit at the Eugenio Espejo Hospital, from December 2016 to June 2017. **Results.** A total of 44 patients were evaluated, average age was 65 years. 36.36% of the patients presented > of 250 PMN in ascitic fluid demonstrating neutroascites in 27.27%, bacterioascites in 6.81% and BSP in 2.27% (Figure 1). In hospitalized patients, the percentage of non-infectious fluid was 63.63%. Percentage of positive cultures was 9.30%, with bacteria detected: *E. coli*, *E. coli* BLEE, *Acinetobacter wolffi*, *Pseudomonas* multisensible. In this study, 20.93% of the participants reported consumption of proton pump inhibitors and it was related to the presence of (BSP) in a statistically significant manner ($p < 0.005$). 11.67% were in secondary prophylaxis with quinolones. In relation to CHILD PUGH, 72.05% of patients showed stage C, 25.58% B and 2.3% A. The average MELD was 21. The main reason for admission was hepatic encephalopathy followed by ascites and sepsis. **Conclusions.** Use of cephalosporins as an effective first line treatment and to avoid usage of proton pump inhibitors in cirrhotic patients with ascites.

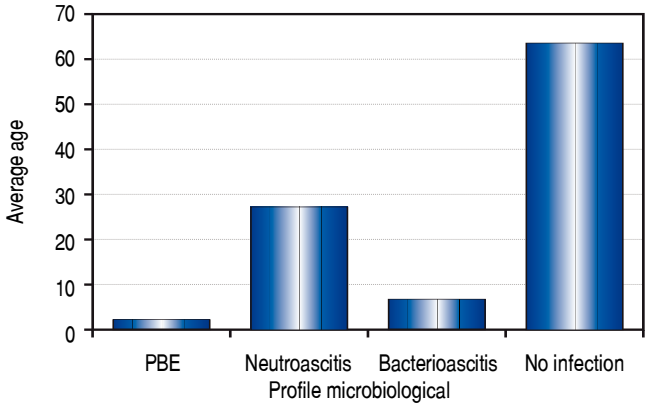

Figure 1 (172). *Source: Results obtained from Laboratorio Hospital Eugenio Espejo 2017. Author: Gruop Gastroenterologist HEE.*

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COMPARATIVE EVALUATION BETWEEN CHILD-PUGH AND MELD, LIKE PROGNOSTIC SURVIVAL SCALES IN HEPATOPATH PATIENTS

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Introduction. The assessment of the prognosis is an essential part in the evaluation of all patients with liver disease. Currently, new models are being developed to optimize the accuracy of the prediction of mortality and survival that is calculated using the Child-Pugh scale (CP) and the model for end-stage liver disease (MELD). **Objectives.** To compare the CP and MELD scales to determine if there is superiority in the prognostic capacity of survival and mortality of one over the other in our hepatopathic patients admitted to the Hospital Salvador B. Gautier in the period August 2013-January 2014, with a long-term follow-up of 1 year. **Material and methods.** A descriptive, observational cross-sectional study of prospective follow-up, which included 30 patients. The prognostic accuracy of mortality and survival was evaluated by the area under the ROC curve (AUROCs) of the CP and MELD scale. **Results.** Mortality at 1 year of follow-up was 14 of 30 patients for a 47 (%) and survival of 53 (%). The AUROCs of the CP and the MELD, to predict survival and in-hospital mortality were 0.75 and 0.78, respectively. When comparing the AUROCs of the CP scale and the MELD, none showed to be superior to the other ($p < 0.05$). **Conclusions.** In the present study we did not find a statistically significant difference between the CP and MELD scale to predict survival at one year of follow-up in patients with hepatopathy.

04 LIVER FAILURE

P-12
THE EFFECT OF ACUTE ON CHRONIC LIVER FAILURE IN PROLONGED HOSPITAL STAY AND READMISSION

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Background. Prolonged hospital stay (PHS) and readmission risk in patients with decompensated cirrhosis are indicators of quality of care. The effect of ACLF in prolonged hospital stay and readmission rates is still unknown. **Aim.** To estimate the effect of ACLF in PHS and 90-day readmission in a cohort of patients hospitalized for acute decompensation of cirrhosis. **Material and methods.** Prospective cohort of patients hospitalized for acute decompensation of cirrhosis. ACLF (CLIF-SOFA) at admission and other variables were collected. Time until discharge, death or transplant was calculated. PHS was defined as > 10 days. Patients that survived the hospitalization were followed for 90 days to estimate the probability of readmission. The effect of ACLF in PHS, presented as the odds ratio (OR, 95%CI), was estimated with standardized inverse probability weighting (sIPW) using age, gender, natremia and presence of SIRS at admission as confounders. The risk of readmission, presented as the marginal hazard ratio (HR, 95%CI) was estimated using a IP-weighted Cox model (using a combined weight for ACLF with previously described confounders plus having survived the hospitalization). **Results.** 109 patients were included,

Table 1 (P-12). Characteristics of patients with cirrhosis hospitalized for acute decompensation. Variables collected at admission.

Characteristics	Total (n =109)
Age in years*	62.20 (14.81)
Male gender	65 (59.6%)
Acute decompensation of cirrhosis**	
New onset or progression ascites	31 (28.4%)
Hepatic encephalopathy	52 (47.7%)
Gastrointestinal hemorrhage	11 (10.1%)
Infection	44 (40.4%)
Cirrhosis etiology	
Alcohol	26 (23.9%)
NAFLD	16 (14.7%)
HVC	24 (22.0%)
Primary biliar cholangitis	9 (8.3%)
Criptogenic	16 (14.7%)
Other	18 (16.5%)
History of previous acute decompensation	81 (74.3%)
Hospitalization in previous 3 months	48 (44.0%)
Comorbidities	76 (69.7%)
Hepatocarcinoma within Milan criteria	9 (8.3%)
Serum creatinine (mg/dL)***	1.0 (0.7-1.4)
Serum bilirubin (mg/dL)***	3.4 (1.6-5.0)
Serum sodium (mEq/dL)***	132 (127-135)
Leukocyte count (mm^3)***	6881 (4885-9017)
INR***	1.7 (1.4-2.0)
Albumin (mg/dL)***	2.7 (2.3-3)
MELD***	12.8 (9.3-17.5)
Child-Pugh score*** +	10 (9-12)
SIRS	15 (13.8%)

** Mean (SD). ** More than one decompensation is possible per individual. *** Median (25th-75th quartile). Comorbidities: defined as cardiovascular disease, diabetes. COPD: chronic kidney disease or any autoimmune disease. INR: international normalized ratio. MELD: model for end-stage liver disease. NAFLD: non-alcohol fat liver disease. SIRS: systemic inflammatory response syndrome. ACLF: acute on chronic liver failure.*

35% (95%CI 26-44%) had ACLF at admission: 68% grade 1, 29% grade 2 and 3% grade 3. PHS was observed in 36% (IC95% 27-47%). The estimated OR of ACLF at admission in PHS is 4.5 (95%CI 1.8-11.7). A total of 84 patients were discharged and followed. The HR of readmission at 90 days after discharge if ACLF was present at admission in index hospitalization is 5.21 (CI95: 2.05-13.26). **Conclusion.** Patients admitted with ACLF are at higher risk of PHS and readmissions at 90 days from discharge. Diagnosis of ACLF at admission is useful to implement strategies to improve quality of care during hospitalization and follow-up.

P-98
MANAGEMENT WITH PENTOXIFYLLINE IN FULMINANT HEPATITIS. PILOT STUDY

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Introduction. Fulminant hepatitis is caused mainly by viruses or chemical agents. It reaches between 70-90% of mortality, has a prevalence of 1/1,000,000. In this pathology, oxidative stress and proinflammatory cytokines are fundamental factors that contribute to the poor prognosis of the disease. Pentoxifylline has antioxidant activity and is a potent inhibitor of the secretion of factors related to the immune response, cell differentiation and apoptosis. **Objectives.** To assess the response of patients diagnosed with fulminant hepatitis with pentoxifylline. **Material and methods.** We evaluated 5 cases of patients with fulminant hepatitis, 4 pediatric patients and 1 adolescent, manifested with grade IV encephalopathy, cerebral edema, jaundice and multiple organ failure, diagnosed with imaging and serological studies, three of them during their process received treatment with pentoxifylline 100 mg every 12 h, in addition in all of them were administered , supportive treatment, fresh plasma, vitamin K, anti-ammonium measures, antibiotics, ventilatory support, among others. **Results.** The 3 patients who were added pentoxifylline to their aforementioned support treatment showed a favorable response in relation to their cognitive, hemodynamic and functional status at 2 weeks after starting the treatment, also improving liver function tests clinically and laboratorially, bleeding time and general condition, thus allowing its discharge on average at 3 weeks, all presenting a subacute hepatitis, in comparison with the remaining 2 patients, which were handled exclusively with support measures previously established, with the outcome of the death. **Conclusion.** The use of Pentoxifylline in the treatment of fulminant hepatitis seems to have an encouraging response in this pilot study. Three of the patients managed to survive and two of them died in the event. We suggest realize multicenter and randomized studies to know their real efficacy.

P-170
CHARACTERIZATION AND PROGNOSIS OF PATIENTS WITH FULMINANT HEPATIC FAILURE (FHF) OF ADULT LIVER TRANSPLANT CENTER BETWEEN OCTOBER 2014- MAY 2018

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Introduction. Fulminant hepatic failure (FHF) is a life threatening condition, with incidence increasing in the last decade. Identification and early referral to a transplant center (HT) improve prognosis. **Objective.** Characterize and determine possible prognosis factors in patients with FHF in a tertiary private Center of Santiago, Chile. **Material and methods.** Observational study of historical cohort of patients with FHF evaluated by a multidisciplinary team of Clinica Las Condes in a period of 44 months. We performed univariate and multivariate analysis of mortality prognostic factors. Statistical analysis used Mann and Whitney test, Fisher test, $p < 0.05$. **Results.** A cohort of 32 FHF, 21 women (65.6%). Median age 38 years (18-60). The most frequent etiology was autoimmune hepatitis (AIH) 13 (40%) viruses and drugs (21% each), acute presentation in 62% and subacute the resting. MELD median was 32 (range 12-40). 62% had hepatic encephalopathy (HE) grade III/IV, with intracranial pressure captor installation in 3. Complications were acute renal failure in 13 (40%) and bacterial infection in 17 (53%). We used external support in 5, high-volume hemofiltration system in 4 and high volume plasma exchange in 1 patient. 26 (81%) met King's College criteria. 16 (50%) were enlisted, 11 (34%) survived without LT, and 9 (28%) were transplanted. 12 (37.5%) die without LT, 6 for contraindications. The median time from activation was 120 h (min 24, max 288). Overall survival was 56%. In multivariate study, variables associated with poor prognosis were the presence of complications (OR 9.42), degree of HE (4.1) and age (1.06). **Conclusion.** FHF affects young people and carries a high mortality despite specific treatments and support therapies. In our cohort, the most frequent etiology was AIH. Delayed referral of these patients could be associated with increased complications and unfavorable prognosis.

05 HEPATITIS

P-05
THE GENETIC VARIABILITY OF GENOTYPE F1B HEPATITIS B VIRUS CORE GENE IS ASSOCIATED WITH THE OUTCOME OF ACUTE HEPATITIS. RESULTS FROM THE ACUTE HEPATITIS B GLOBAL STUDY

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Background. Acute hepatitis B virus (HBV) infection in adults spontaneously resolves in most cases, but can induce acute liver failure (ALF) or evolve to chronic hepatitis (CH) in some patients. Viral and host genetic variability have been associated with the development of CH and/or ALF in some HBV genotypes. **Aim.** To analyze the association of viral and host genetic variability with the outcome of acute HBV infection in patients infected with genotype F1b. **Material and methods.** In the Global Study 200 patients with acute HBV were prospectively included. Patients were followed for 6 months and divided into two groups according to the evolution of the acute infection: group 1 including patients who resolved the infection (HBsAg clearance during the follow up) and showed preserved liver function during the evolution; and group 2 including patients who evolved to CH (HBsAg persistence > 6 months of follow up) or developed acute severe hepatitis (prothrombin time < 50% without encephalopathy) or ALF (prothrombin time < 50% and any grade of hepatic encephalopathy). In the present sub-study only patients infected with HBV genotype F1b were included. The association of viral and host variables (detailed in table 1) with the evolution of the acute hepatitis was explored with bivariate statistics. **Results.** 26 patients were included: 10 in group 1 (resolved infection) and 16 in the group 2 (10 with evolution to CH; 6 with acute severe hepatitis or ALF). Comparison among groups is shown in the table 1. The rs3077-C and rs2856718-C alleles were recessively associated with evolution to CH and HBsAg clearance, respectively. The number of pre-core/core mutations, pre-core/core mutation rate and Shannon entropy were significantly higher in group 2 patients. **Conclusions.** These results suggest that apart from the previously described host genetic diversity, the genetic variability of the HBV core gene is associated with an unfavorable evolution of acute hepatitis B in patients infected with genotype F1b.

Table 1 (P-05).

Characteristics	All (n = 26)	Group 1 (n = 10)	Group 2 (n = 16)	p-value
Host characteristics				
Age-years*	57.5 (46-68)	46.5 (43-66)	59.5 (50.5-70.5)	0.101
Male Gender, n (%) **	20 (77)	7 (70)	13 (81)	0.644
HLA-DP SNP CC genotype ***	13 (50)	2 (20)	11 (69)	0.021
HLA-DQ SNP CC genotype ***	8 (31)	6 (60)	2 (12.5)	0.026
Viral characteristics				
Number of Mutations S gene*	2 (1-3)	2 (1-3)	1 (0-2)	0.137
Number of Mutations Pre-core/core region *	3 (1-4)	2 (0-3)	4 (3-5)	0.007
Mutation Rate Pre-core/core region*	0.505 (0.29-0.71)	0.24 (015-0.32)	0.68 (0.53-0.795)	< 0.001
Shannon Entropy Pre-core/core region *	0.065 (0.055-0.071)	0.058 (0.055-0.065)	0.074 (0.07-0.078)	0.023

** Median (IQR). ** Number (%). CC vs. TT + CT.*

P-13
RISK FACTORS FOR PROGRESSION TO CHRONIC HEPATITIS IN PATIENTS WITH ACUTE HEPATITIS B: RESULTS FROM THE ACUTE HEPATITIS B GLOBAL STUDY

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Background. There are no recognized risk factors for progression to chronic hepatitis in adults with acute hepatitis B virus (HBV) infection. **Aim.** To identify risk factors of progression to chronic hepatitis in adults with acute hepatitis B. **Material and methods.** From August/2015 to September/2017 patients aged > 17 years with acute hepatitis B were prospectively included. Acute hepatitis B was considered in symptomatic patients with positive anti-HBc IgM and ALT > 250 IU/L. Patients were followed for 6 months and divided into two groups according to the evolution of the acute infection: Patients who resolved the infection (HBsAg clearance during follow up) and patients who evolved to chronic hepatitis (HBsAg persistence during follow up). We evaluated the effect of different factors on evolution to chronic hepatitis, including ALT < 1,700 IU/L at diagnosis. We chose this cutoff based on ROC curve analysis [negative predictive value of evolving to chronic hepatitis 97.7% (95%CI 93.3%-99.5%)]. **Results.** Two hundred patients were included. Median age was 44 (35-56) years and 163 (81%) were male. Sexual transmission was declared in 169 (84%) patients. HBV genotype was available in 145 patients: F: 111 (77%), A: 29 (20%) and D: 5 (3%). At diagnosis 171 (89%) were HBeAg-positive. A total of 23 patients (11.5%, 95% CI: 7.7%- 17.0%) evolved to chronic hepatitis. Bivariate analysis is shown in table 1. After adjusting for age, basal bilirubin and prothrombin time, for every increase in 100 IU/L in ALT at the moment of the diagnosis, the odds of evolving to chronic hepatitis was 0.85 (95%CI 0.78 - 0.92, p < 0.001). Adjusting for the same variables, the odds of evolving to chronic hepatitis in patients with ALT < 1700 IU/L at diagnosis was 8.32 (95%CI 2.20 - 31.40, p 0.002). **Conclusions.** Patients with acute HBV infection with lower ALT levels at diagnosis are at higher risk of evolving to chronic hepatitis. Closer follow up of these patients is recommended.

Table 1 (P-13). Viral and host characteristics of the 200 patients according to the evolution.

Variable	Infection resolution (n = 177)	Evolution to chronic hepatitis (n = 23)	p
Age- years, median (IQR)	44.5 ± 13.3	55.4 ± 17.0	0.007
Male gender, n (%)	143 (80.8)	20 (87.0)	0.580
Route of transmission, n (%)			
Sexual	151 (85.3)	18 (78.3)	0.429
Nosocomial	1 (0.6)	0 (0)	
Unknown	25 (4.1)	5 (21.7)	
HBV genotype,* n (%)			
A	26 (21.0)	3 (15.0)	0.711
D	5 (4.0)	0 (0)	
F	98 (75)	18 (85.7)	
ALT - UI/L, median (IQR)	2593.6 ± 1506.2	901.8 ± 584.7	< 0.0001
ALT < 1,700 UI/L, n (%)	52 (29.4)	20 (87.9)	0.002
Prothrombin time -%, median (IQR)	71.2 ± 23.8	84.3 ± 12.8	0.0002
Albumin - g/dL, median (IQR)	3.7 ± 0.5	3.7 ± 0.5	0.5882
Bilirubin - mg/dL, median (IQR)	9.0 ± 7.1	4.4 ± 7.1	0.0066
HBeAg-positive**	149 (88.2)	22 (100)	0.136
HIV-positive,*** n (%)	8 (4.6)	1 (4.6)	0.731

** Available in 145 patients. ** Available in 191 patients. ***Available in 195 patients.*

P-14
INTRAMOLECULAR COVEVOLUTION ANALYSIS OF PROTEIN NS5A OF HEPATITIS C VIRUS (HCV) IN GENOTYPES 1 TO 6

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Introduction. The effects of direct-acting antiviral agents (DAAs) are affected by the presence of resistance-associated variants (RAVs). Resistance mutations that are detected in a protein can be accompanied by other compensatory mutations, for this reason it is important to analyze if in the NS5A protein is observed mutations or compensatory polymorphisms that could contribute to resistance to DAAs. **Objetive.** Analysis of intramolecular coevolution of NS5A protein for antiviral treatment. **Material and methods.** Were analyzed groups of non-redundant sequences of genotypes 1 through 6 of the NS5A protein. For the analysis of the intramolecular co-evolution between the amino acids sites that belong to the same protein, the CAPS software was used. The three-dimensional structure of the amino acid residues of NS5A related to resistance to antivirals was represented by PyMol, in order to obtain the spatial localization of such residues. **Results.** Intramolecular coevolution analysis of the NS5A protein was performed, represented by a set of protein sequences extracted from international databases: European, GenBank, and Los Alamos HCV databases. Some amino acids related to resistance to NS5A inhibitors (L28M/V, R30Q/L, Q54H/N/L/Y, P58S/A/L/T/H, Q62E/R/A/P/S, Y93H/N/C, V153M/L/I, M202L, M265V/T for genotype 1a; L28M/V, R30Q/L, L31M/V/F, Q54H/N7L/Y, P58S/A/L/T/H, Q62E/R/A/P/S, A92T, Y93H/N/C, V153M/L/I, M265V/T, D320E for 1b) (P58S/A/L/T/H, Q62E/R/A/P/S, A92T, M265V/T, D320E, Y321N for 2) (L23F, Q24L, L28M/V, R30Q/L, L31M/V/F, P58S/A/L/T/H, Q62E/R/A/P/S, M265V/T for 3) (L28M/V, R30Q/L, Q62E/R/A/P/S, Y93H/N/C, F149L, D320E for 4) (R30Q/L for 5) (Q24L, L28M/V, Q54H/N/L/Y, P58S/A/L/T/H, Y93H/N/C, M265V/T, D320E for 6) evolve together with others, at intraprotein level, possibly to maintain viral fitness. **Conclusions.** Computational coevolution analysis allowed us to understand the protein interaction network of the HCV involved in antiviral resistance. The identified coevolving residues constitute highly relevant predictions of protein-protein interactions for the subsequent experimental identification of HCV protein complexes. The method can be used to analyze other viral proteins and to predict the associated protein interaction networks.

P-19
EVALUATION OF DRIED BLOOD SPOT SAMPLES TO DETERMINE HEPATITIS B VIRUS PREVALENCE IN DIFFERENT ENDEMICITY GROUPS

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Introduction. Hepatitis B virus (HBV) infection is a global health problem that represents a significant co-morbidity. Dried blood spots (DBS) testing might increase the access for HBV diagnosis, but little is known about the performance of these assays in different background prevalence profiles. **Objectives.** This study aims to evaluate the detection of HBsAg, anti-HBc and anti-HBs in DBS in populations with different background prevalence (infection rates). **Material and methods.** Paired sera and DBS samples were obtained from 2,309 individuals from 3 groups, defined as follows: G1: high-prevalence group (n = 509), G2: low-prevalence group (n = 1,305) and G3: vulnerable individuals living in settings with varied background prevalence (n = 485). Sera and DBS were tested using commercial enzyme immunoassay (EIA), with some modifications added for DBS testing. **Results.** Specificity values were above 90% for HBsAg and anti-HBc in all groups and for anti-HBs range to 58.6% to 85%. HBsAg testing was good in GI (sensitivity = 84.4%) and in those samples that had anti-HBc (sensitivity = 91.6%) or HBV DNA detected in serum (sensitivity = 92.2%). High sensitivity of anti-HBc testing was observed in GI (80.8%) and among active cases ($HBsAg^+$/anti-HBc^+) (98.4%). Testing of anti-HBs in DBS showed the highest sensitivy in GIII (65.5%), in previous exposed and cured individuals and when serum titers were above 100 IU/mL (86.7%). Anti-HBs testing in DBS demonstrated low performance, but could be a screening method to identify individuals presenting high antibody titers. **Conclusion.** DBS samples could be used for screening and prevalence studies for HBsAg and anti-HBc, especially in high-prevalence settings and HBV active cases that should be treated.

P-20
SYSTEMIC INFLAMMATORY MOLECULES ARE ASSOCIATED WITH ADVANCED FIBROSIS IN HDV GENOTYPE 3 HEPATITIS DELTA

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Introduction. HDV-3 is responsible for outbreaks of fulminant hepatitis in northeastern South America. However there are no studies demonstrating the association between immune response and liver damage caused by HDV-3. **Objective.** To investigate the association of systemic inflammatory molecules (SIM) and their association with advanced fibrosis in patients chronically infected with HDV genotype 3. **Material and methods.** 61 patients coinfected with HBV/HDV-3 näive were included in this study. Diagnostic tests to screen for HBV/HDV infections were performed using standard immune serology testing. HDV quantification and genotyping was performed by semi-nested RT-PCR and RFLP methodology. 92 SIMs were measured by Proximity Extension Assay (PEA) technology (Proseek Multiplex Inflammation I assay). Shapiro-Wilk, Student's *t* test, Mann-Whitney tests and logistic regression analysis were used when appropriate. **Results.** The median age was 41 years (18-59 years) and all patients were HBeAg negative. Advanced fibrosis or cirrhosis (F3/F4) was diagnosed by histological staging in 17 patients while 44 presented with minimal or no fibrosis. Advanced necroinflammatory activity correlated positively with serum levels of AST and ALT (p = 0.024 and 0.020, respectively). Non-invasive fibrosis scores developed for hepatitis C and B (APRI, FIB-4 and AST/ALT ratio) revealed low sensitivities and PPVs with AUROC maximum of 0.586. Among the 92 SIMs analyzed, MCP4 (p = 0.032), CCL19 (p = 0.024), EN.RAGE (p = 0.014), CSF1 (p = 0.01) and IL 18 (p = 0.054) showed a positive correlation with fibrosis stage. A combined score including CCL19 and MCP.4 revealed a sensitivity of 80.9% and an Odds Ratio of 2.202 for advanced fibrosis. **Conclusions.** Standard non-invasive fibrosis scores showed poor performance in HDV G3 infection. We here suggest that determination of CCL19 and MCP.9 maybe used to identify patients with advanced fibrosis. Moreover, this study gives novel insights in the immunopathogenesis of HDV G3 infection. **Financial support.** of Improvement of Higher Education Personnelerior (CAPES) Maria Emília Pedreira Freire de Carvalho Foundation and the German Center for Infection Research (DZIF). **Conflict of interest.** No.

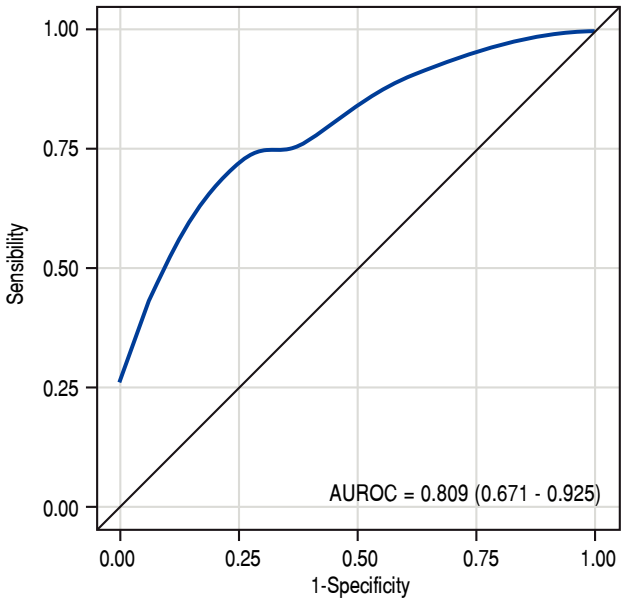

Figure 1 (P-20). *Logistic regression (CCl19 and MCP.4).*

P-26
VARIABILITY OF HEPATITIS E SEROPREVALENCE IN HEMODIALYSIS PATIENTS: A PROSPECTIVE ANALYSIS

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Introduction. Hepatitis E virus (HEV) genotype 3 has been associated with chronic hepatitis in immunosuppressed individuals. Several studies have shown that patients undergoing hemodialysis (HD) have a higher seroprevalence of HEV than the general population. The dynamics of HEV in this population are unclear. **Objectives.** To assess the incidence of new and chronic HEV infections as well as temporal variations in HEV serostatus in patients undergoing HD. **Material and methods.** We prospectively evaluated HEV seronegative individuals (n = 51) with end stage renal disease (ESRD) undergoing HD at a hospital in Córdoba, Argentina, between November 2014 and 2017. All individuals underwent serological reassessment at either 6 or 12 months post-initial evaluation. Thirty individuals underwent 2 additional serological assessments (separated by ≥ 6 months) over a 36-month period (total of 4 assessments). Detection of anti-HEV IgG and IgM was performed by ELISA and amplification of HEV RNA was performed using nested-PCR. **Results.** Of 51 individuals who were initially seronegative for anti-HEV IgG, 5 underwent seroconversion, representing an in-

cidence of 9.8% (5/51). Three of five patients who underwent seroconversion reverted back to a negative anti-HEV IgG status ≥ 6 months later. Only one patient remained seropositive throughout the course of the study, and one patient showed positivity for anti-HEV IgG in the last sample taken (therefore it is unclear if they maintained seropositivity over time). All samples, including those who were positive for anti-HEV IgG, were negative for anti-HEV IgM. No subjects tested positive for HEV RNA during the entire study period and there were no chronic infections. **Conclusions.** Our results demonstrate alternating serostatus for HEV in individuals undergoing HD, suggesting that positivity for anti-HEV IgG may not indicate persistent immunity to the virus in this population.

P-27
ANALYSIS OF THE SERO-EPIDEMIOLOGY AND CLINICAL IMPACT OF HEPATITIS E IN SOUTH AMERICA

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Introduction. Hepatitis E virus (HEV) is a frequent cause of acute viral hepatitis of enteric transmission worldwide. In South America, the overall epidemiology and burden of disease remains largely unknown. **Objective.** To evaluate available data about HEV in South America in order to understand the impact of the virus in the region. **Material and methods.** We searched published scientific articles regarding HEV in South America by assessment of Pubmed/NLM using the following keywords: HEV, South America, seroprevalence, genotypes, circulation. The search yielded 81 articles and these were evaluated to address the seroprevalence of HEV in human and animal samples, acute and chronic cases as well as associated risk factors in the region. **Results.** The overall prevalence of HEV IgG in South America among blood donors ranged from 1.8 to 9.8%. Reports from Brazil and Argentina yielded a much higher seroprevalence of HEV among HIV-infected individuals, transplant recipients and patients undergoing hemodialysis. HEV genotype 3 was the most frequently detected genotype in the region, while genotype 1 was only detected in Venezuela and Uruguay. Extra-hepatic manifestations of HEV were rare, with one case of HEV-associated thyroiditis and aplastic anemia reported in Argentina. Chronic HEV was equally rare with only two cases reported in solid-organ transplant recipients. Interestingly, HEV was prevalent in the swine population with rates as high as 100% in slaughterhouses of certain Colombian regions. HEV positivity was also reported in wild boars from Uruguay. **Conclusions.** HEV is widely distributed throughout South America with variable prevalence in humans as well as animals. While there are sporadic cases of acute HEV, chronic infection does not represent a public health issue and extra-hepatic manifestations are uncommon.

P-38
HEPATITIS C MICRO ELIMINATION PERFORMED BY PARTICIPANTS OF ECHO- PROJECT IN ARGENTINA: LOWER PREVALENCE THAN EXPECTED

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Background and aims. Most of the people who live with HCV in Argentina have not been diagnosed. The World Health Organization promotes HCV testing in high risk populations. We described HCV microelimination efforts performed by participants of ECHO HCV Project ran by Hospital Italiano de Buenos Aires. **Material and methods.** The HCV teleECHO clinic which provides virtual support and training to physicians from different regions of Argentina was launched in March 2015. Three microelimination projects directed by ECHO participants were performed. Two projects targeted cities with known or presumed high HCV prevalence: Villa Maria (Córdoba) and Laguna Paiva (Santa Fe), respectively. The third project was performed in a prison of Bariloche (Rio Negro). Epidemiological surveys were performed to asses HCV risk factors. Rapid tests or 3rd generation ELISA were used; all positive tests were confirmed by quantitative RT-PCR. **Results.** Overall 482 people were tested, of whom 4 were positive. Taking together the three projects the prevalence of hepatitis C was 0.8%. The prevalence was highest in Villa Maria (Córdoba) where 3 out the 158 (4.7%) people were positive. An intermediate prevalence was found in the project that targeted the prison in which 1 out of 132 (0.7%) people were positive. No cases were detected in the project that targeted Laguna Paiva city. **Conclusion.** The prevalence of HCV obtained by three different microelimination projects was lower than expected. There is a need to redefine priority populations to test for HCV.

Table 1 (P-38). Characteristics of the three hepatitis C micro elimination projects performed by participants of ECHO-Hospital Italiano de Buenos Aires.

Variables	Laguna Paiva Santa Fe	Villa María Córdoba	Bariloche Río Negro
Rationale for HCV micro elimination	Presumed high HCV prevalence location	Known high HCV prevalence location	Prison
Date	10-14 August, 2015	28 July, 2017	4 September, 2017
Type of sampling	Randomized population clusters	By convenience	Consecutive
People tested, num.	195	158	132
HCV screening test	3rd Gen ELISA	3rd Gen ELISA	3rd Gen ELISA or rapid test
Age - years, mean ± SD	56.0 ± 12.0	56.3 ± 17.1	32.7 ± 9.9
Risk factors, n (%)			
Prison	4 (2%)	0 (%)	158 (100%) [c]
IV or nasal drug use	1 (0.5%)	0 (0%)	14 (31.1%) [c]
Transfusions	48 (24%) [a]	15 (9.5%) [b]	1 (2.2%)b, [c]
Surgery	132 (67%) [d]	NA	21 (46.6%) [c, d]
Tattoo or piercing	18 (9%)	11(17.4%)	21 (46.6%) [c]
Sexual risk	0	NA	NA
HCV + Mother	NA	4 (6.3%)	NA
HCV positive, n (%)	0 (0%)	3 (4.7%)	1 (0.7)

NA: not available. [a] Anytime. [b] Prior to 1992. [c] Available in 45 people. [d] Any surgery in anytime.

P-41
SEROPREVALENCE OF HEPATITIS C AND HEPATITIS B VIRUSES IN BLOOD DONORS OF THE GENERAL HOSPITAL OF MEXICO "DR. EDUARDO LICEAGA"

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Background. The epidemiological investigation of diseases transmitted by blood transfusion is of great importance, because it is possible to know the distribution and seroprevalence of these diseases through blood banks. In Mexico, there are few epidemiological studies. In our country, a prevalence of around 0.4-1.4% is estimated for hepatitis C virus (HCV) and for hepatitis B virus (HBV) it has fluctuated between 0.16 to 0.4%. **Objectives.** To determine the prevalence of HCV and HBV in blood donors of the General Hospital of Mexico "Dr. Eduardo Liceaga" in a period of 5 years, from 2012 to 2016. **Material and methods.** A retrospective, observational study was carried out on the files of the donors who attended the Blood Bank of the General Hospital of Mexico, from January 1, 2012 to December 31, 2016, and who met the criteria of the Official Mexican Standard NOM - 003-SSA2-1993 "For the provision of human blood and its components for therapeutic purposes". Accepted donors were included who presented positive anti-HCV with ELISA technique (Reagent: Deciscan HCV Plus Bio-Rad) and positive confirmatory test by RIBA (Reagent: Riba HCV 3.0.5.1.A Bio-Rad); as well as accepted donors who presented positivity to HBsAg (Abbott Neutralization). **Results.** 115,012 blood donors were evaluated, 83,957 (73%) men and 31055 (27%) women; 118 donors had positive anti-HCV (Reagent: Riba HCV 3.0.5.1.A Bio-Rad) confirmed by PCR (Reagent: Deciscan HCV Plus Bio-Rad); with a prevalence of 0.10%. 77 male and 44 female. On the other hand, 16 donors had positive HBsAg (Abbott Neutralization); which yields a prevalence of 0.01%. 11 were male and 5 female. Regarding the risk factors, 67 patients reported 2 or more sexual partners in the last 5 years; the rest of the risk factors were denied. **Conclusions.** The seroprevalence of HCV and HBV in blood donors of the General Hospital of Mexico is lower than that reported nationally and internationally. Studies in blood donors involve the selection of patients, excluding those with risk factors, so that the actual prevalence may be higher. It is necessary to carry out a greater number of epidemiological studies, especially in the open population and with risk factors.This work was not sponsored. **Conflict of interest.** The authors declare no conflict of interest.

P-43
CHARACTERISTICS AND OUTCOMES OF ACUTE HEPATITIS B IN ARGENTINA: RESULTS FROM THE ACUTE HEPATITIS B GLOBAL STUDY

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Background. Acute hepatitis B virus (HBV) infection continues to be an important health problem worldwide. Studies reporting outcomes in patients with acute hepatitis B were performed more than 20 years ago. **Aim.** To describe the characteristics of acute hepatitis B and to estimate the proportion of patients who develop acute liver failure (ALF) or evolution to chronic hepatitis B (CHB). **Material and methods.** From August 2015 to September 2017 patients aged > 17 years with acute hepatitis B were prospectively included. Acute hepatitis B was considered in symptomatic patients with positive anti-HBc IgM and ALT > 250 IU/L. Patients who underwent immunosuppressive therapies during the 24 week-period prior to enrolment or who were unwilling to consent were excluded. Patients were followed for 6 months and divided into three groups according to the evolution of the acute infection: patients who resolved the infection (HBsAg clearance during follow up), patients who develop ALF (prothrombin time < 50% and any grade of hepatic encephalopathy) and patients who evolved to CHB (HBsAg persistence at 6 months of follow up). **Results.** 200 patients were included. Median age was 44 (35 - 56) years and 163 (81%) were male. Sexual transmission was declared in 169 (84%) patients. Median ALT was 2,528 (IQR 1,543 - 3,715) IU/L and median total bilirubin 10.7 (IQR 6.1 - 19) mg/dL. HBV genotype was available in 145 patients: F: 111 (77%), A: 29 (20%) and D: 5 (3%). At diagnosis, 9 (4.6%) patients were HIV co-infected and 171 (89%) were HBeAg-positive. No cases of HCV co-infection were observed. A total of 15 patients developed ALF (7.5%, 95% CI: 4.5% - 12.1%), of whom 9 (60%) died, 4 (27%) underwent liver transplantation and 2 (13%) survived with supportive care. Evolution to CHB was observed in 23 patients (11.5%, 95% CI: 7.7%-17.0%). **Conclusions.** Almost 20% of adults with acute hepatitis B present unfavorable outcomes (ALF or evolution to CHB) which is higher than what was historically reported.

P-47
REAL WORD DATA OF HCV TREATMENT WITH DIRECT ACTING ANTIVIRALS IN PATIENTS WITH CHRONIC KIDNEY DISEASE FROM THE LATIN AMERICAN LIVER RESEARCH EDUCATIONAL AND AWARENESS NETWORK (LALREAN)

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Background. Real word data evaluating the effectiveness of direct acting antivirals (DAAs) in HCV treatment patients with chronic kidney disease (CKD) has been reported from different regions. **Aim.** To evaluate the effectiveness of DAAs treatment among this special population in routine clinical practice in Latin America. **Material and methods.** From a prospective multicenter cohort study of HCV patients treated with DAAs according to international guidelines from January 2015 to April 2018, patients with CKD stage 4 and 5 (eGFR < 30 mL / min), and kidney transplanted (KT) patients with eGFR > 30 mL/min were analyzed. DAAs regimens included: Sofosbuvir + Daclatasvir (SOF/DCV), Paritaprevir / Ritonavir / Ombitasvir / Dasabuvir (PROD), and Elbasvir / Grazoprevir (EBR/GZR). **Results.** From a total of 1749 treated patients included in the database, 108 who fulfilled the inclusion criteria initiated treatment, and 67 underwent 12 weeks post-treatment evaluation and were included in the analysis. Baseline characteristics and outcomes are presented on the table 1. Overall SVR 12 rate was 95.5%. SVR 12 rate was 94.3% in patients with CKD stage 4-5, and 93.7% in patients who underwent KT. SVR 12 rate was 96.8% (n = 31 / 32 patients) in patients treated with SOF/DCV, 75% (3 / 4) and 96.7% (n = 30 / 31) with PROD. During post-SVR12 follow-up 1 KT patient died from non-liver related cause. None of the patients required a liver transplant, developed HCC or any event of liver decompensation. Two patients discontinued treatment before completing it: 1 of them achieved SVR 12 and the other not. One KT patient treated with SOF/DCV developed a decrease in eGFR, from stage 1 to stage 2 CKD. **Conclusion.** Treatment with DAAs in patients with CKD in this real life cohort from Latin America was safe and effective, despite being a difficult to treat population.

Table 1 (P-47). Baseline characteristics and main outcomes.

Baseline characteristics	CKD stage 4-5 (n = 35)	Kidney transplant (n = 32)
Male sex (%)	48.57	38.71
Age (mean, yrs)	50.37 (SD 13.32)	53.25 (SD 11.49)
CKD stage		
CKD 1-3, n	0	32
CKD 4, n	8	0
CKD 5 (dialysis), n	27	0
Fibrosis stage 1,2,3,4 (%)	45 / 22 / 3 / 30	53 / 12 / 15 / 19
GT1, 1a, 1b, 2, 3, 4 (%)	0 / 17 / 74 / 0 / 9 / 0	6 / 53 / 29 / 3/ 9 / 0
Previous non responders (%)	11.38	25.81
DAAs		
SOF / DCV, n (%)	6 (17)	26 (81)
PROD, n (%)	25 (72)	6 (19)
EBR / GZR, n (%)	4 (11)	0 (0)
With RBV (%)	17.14	9.37
Overall SVR12 (%)	97.14	93.75
Any adverse event (%)	31.42	15.62

Sponsors of LALREAN: Bristol-Meier Squibb, Merck Sharp & Dohme, and Abbvie.

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BIOCHEMICAL RESPONSE TO TREATMENT WITH DIRECT ACTION ATIVIRALS IN PATIENTS WITH CHRONIC HEPATITIS VIRUS C

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Introduction. The high cost of serological tests limits the diagnosis and monitoring of chronic hepatitis C virus, and in the verification of sustained viral response. Transaminases are lower cost tests which may help to infer that, if there is biochemical improvement, we are in the presence of diminished viremia, although this is not an indication of cure, it could indicate that viremia levels have decreased and that the inflammatory process is subsiding. In Venezuela, the high cost of PCR means that not all patients have access to it, which means that a high percentage of patients will not be able to verify post-treatment healing. **Objective.** To measure transaminase values during therapy with direct antivirals, as a predictor of clinical improvement, and virological in patients with chronic hepatitis C virus. **Material and methods.** Is a cross-sectional study, which included 25 patients who received therapy with AAD (Daclatasvir, Sofobusvir, Rivabirine) in dual or triple therapy according to the patient's condition: naive, cirrhotic, non-responder or relay, belonging to the consultation of hepatology of the Hospital "Miguel Pérez Carreño", Caracas, Venezuela, regardless of age, sex, genotype, naive or nonresponder or relay. TSGO, TSGP values were measured before and at the end of the treatment. The data was grouped into graphs and percentages as a statistical index. **Results.** 96% of the patients at the beginning of the therapy presented high TSGS-TSGP. 100% PCR+, the average age of the 5th decade of life, predominant genotype 1a, 56% corresponded to naive patients and 44% to non-responders or recaptors. Finally, only 28% of the patients underwent post-treatment PCR, which verified healing and 83% of patients normalized transaminase after treatment. **Conclusion.** The high costs of viral serology for hepatitis C, such as PCR, make it necessary to search for diagnostic alternatives and to monitor cure in chronic hepatitis C virus.

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CONTRIBUTION OF CUBAN BIOTECHNOLOGY INDUSTRY TOWARDS THE ELIMINATION OF HEPATITIS B AND C

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Introduction. One of the current objectives of the World Health Organization is to eliminate the transmission of viral hepatitis and guarantee safe and effective treatment for all patients. The Cuban biotechnology industry has experience in the development of products with high medical and social impact in the diagnostic and treatment of hepatitis B and C. **Material and methods.** Center for Genetic Engineering and Biotechnology in Havana, Cuba developed a novel therapeutic vaccine for chronic hepatitis B infection, previously it had also developed a prophylactic recombinant hepatitis B vaccine and the conventional and pegylated alfa interferon; all these products were evaluated in rigorous clinical trials up to demonstrate an adequate safe and efficacy profiles. In parallel, the Immunoassay Center in Havana, Cuba has been in charge of developing and validating systems and equipment for serological and molecular

diagnosis of viral hepatitis. **Results.** Four biotechnological products and 12 Cuban diagnostic systems for viral hepatitis have reached the sanitary registry. In 2015, the treatment of chronic hepatitis C with pegylated interferon and ribavirin showed a 27% increase in the control of viral replication, compared to the maximum achieved by conventional interferon monotherapy in the last years of the 20th century. The Cuban program of vaccination against hepatitis B has immunized the entire population under 35 years of age and since 2000 no new cases were reported in children under five; chronic patients treated with the therapeutic vaccine achieve up to 77% sustained virological response for more than 174 weeks. The Cuban Health System has nearly 1,500 laboratories equipped with 3rd and 4th generation technology and diagnostic systems that offer more than 99% sensitivity and specificity in serological and viral load evaluations in patients with hepatitis B and C. **Conclusions.** Cuba is today in a favorable scenario in the fight for the elimination of viral hepatitis.

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PREVALENCE OF DIABETES MELLITUS, METABOLIC SYNDROME, HEPATITIS STEATOSIS AND STEATOHEPATITIS IN A COURTE OF PATIENTS WITH HEPATITIS C

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Introduction. Studies have described the association of hepatitis C virus (HCV) infection with metabolic diseases such as diabetes mellitus (DM) and non-alcoholic fatty liver disease (NAFLD). **Objective.** To evaluate the prevalence of diabetes mellitus and metabolic syndrome (MS) in patients with HCV and to verify their association with degree of fibrosis and viral genotype. **Material and methods.** A cross-sectional, descriptive study was carried out with 136 patients chronically infected with HCV. The independent variables analyzed were sex, age, ethnicity, fibrosis degree, steatosis or steatohepatitis, body mass index (BMI), viral load and genotype, presence of DM and MS. **Results.** Among of 136 participants, 71 (52%) were male; (50) 37% white, 38 (28%) brown and 48 (35%) black. The mean age was 56 (± 9.4) years and BMI was 27 (± 4.7). The genotypic profile was: 1a (55%), 1b (33%), 3 (4.1%), 3a (4,1%), 1 (2%) and 2 (0.8%). 61% of the patients presented stage fibrosis (F0-F2); 19% (F3) and 20% (F4) by the METAVIR score. 5% presented MS (of these 57% had DM and 57% had NAFLD). 17% had DM (of these 17.4% had MS and 66.7% NAFLD). 59% had NAFLD (of these 11% had MS and 32% had DM). 31% had NASH (non-alcoholic steatohepatitis), of these 17% had MS and 33% had DM. An association between advanced liver fibrosis (F3-F4) and the presence of DM or MS was found. All patients with diabetes had HCV genotype 1 (60.9% subtype 1a). Of the patients with NAFLD, they had mild fibrosis 48.6%, F3: 19%, F4: 32.4%. Of the patients with NAFLD and advanced fibrosis, 63% had genotype 1a and 37% 1b. 50% of NASH patients had advanced fibrosis. **Conclusions.** There is a high prevalence of DM, NAFLD and NASH in patients with HCV. HCV and DM or HCV and MS comorbidity is related to F3/F4 fibrosis stage. Patients with DM had a low prevalence of MS, suggesting the virus is triggering the DM. The presence of NAFLD is related to a higher frequency of advanced fibrosis, however, NAFLD was not associated with DM or MS. **Financial support.** Maria Emília Pedreira Freire de Carvalho Foundation. **Conflict of interest.** No.

P-64
EFFECT OF HLA-DQB1 GENOTYPES ON SUSCEPTIBILITY TO CHRONIC HEPATITIS B INFECTION IN A MULTIETHNIC LATIN AMERICAN POPULATION

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Background. Polymorphisms within HLA DP and DQ have been associated with chronic hepatitis B (CHB) in Asian, Arabian and Argentinian populations. Due to the high degree of variability of HLA genes, genotyping-based association analysis is necessary to understand the associations between HLA genes and CHB infection. **Aim.** To determine associations between CHB infection and HLA-DQB1 alleles in Argentina. **Material and methods.** CHB patients, HBV-resolved individuals and healthy controls were recruited from the metropolitan (MET) and northwestern (NWA) regions of Argentina. Genetic ancestry was compared between both geographical regions and among the three groups of each region. HLA-DQB1 genotyping was compared among the three groups in each region. Chi-square (χ^2) test with Bonferroni correction was used for statistical analyses. **Results.** 1,605 subjects were included in the study. Native American ancestry was less prevalent in MET (29.7%) when compared with NWA (77.5%; $P < 0.0001$). However, no significant differences were observed in the distribution of ancestry components among the three groups of each region. Four significantly associated alleles (two susceptible alleles, *DQB1*03:03* and *DQB1*06:01*, and two protective alleles *DQB1*03:02* and *DQB1*05:01*) were observed in both re-

Table 1 (P-64). Comparison of the prevalence of the significantly-associated HLA-DQB1 alleles between groups in Metropolitan and Northwestern Argentina.

	Metropolitan region (2n* = 1,651)					Northwestern region (2n = 1,558)				
*DQ81	CHB (2n = 422)	Controls (2n = 514)	Reslved (2n = 716)	CHB *vs.* Controls	CHB *vs.* Resooved	CHB (2n = 450)	Controls (2n = 442)	Resolved (2n = 666)	CHB *vs.* Controls	CHB *vs.* Resolved
03:01	97 (22.9%)	104 (20.2%)	142 (19.8%)	P = 0.3; OR = 1.2 95%CI = 0.9 - 16	P = 0.2; OR = 1.2; 95%CI = 0.9 - 1.6	147 (32.7%)	100 (22.6%)	136 (20.4%)	P = 0.0008; 1.6 95%CI = 1.2 - 2.2	P = 0.000; OR = 1.9; 95%CI 1.4 - 2.5
03:02	16 (3.8%)	49 (9.5%)	72 (10.05%)	P = 0.0009; OR = 0.4 95%CI = 0.2 - 07	P = 0.0002; OR = 0.3; 95%CI = 0.2 - 06	124 (27.5%)	180 (40.7%)	278 (41.7%)	P ≤ 0.0001; OR = 0.5; 95%CI = 0.4 - 0.7	P ≤ 0.0001; OR = 0.5 95%CI = 0.4 - 0.7
03:03	56 (13.3%)	28 (3.4%)	47 (6.6%)	P = 0.0001; OR = 2.6; 95%CI = 1.6 - 4.3	P = 0.0002; OR = 2.2; 95%CI = 1.4 - 3.3	91 (20.2%)	52 (11.8%)	82 (12.3%)	P = 0.0007; OR = 1.9 95%CI = 0.03 - 2.7	P = 0.0004; OR = 1.8; 95%CI = 1.3 - 2.5
05:01	17 (4%)	52 (10.1%)	71 (9.9%)	P = 0.0006; OR = 0.4; 95%CI = 0.4 - 06	P = 0.0005; OR = 0.4; 95%CI = 0.2 - 06	3 (0.7%)	22 (4.9%)	34 (5.1%)	P = 0.0009; OR = 0.1 95%CI = 0.03 - 0.4	P = 0.0004; OR = 0.1; 95%CI = 0.04 - 04
06:01	46 (10.9%)	15 (2.9%)	(18) (2.5%)	P = 0.0001; OR = 4.1; 95%CI = 2.2 - 7.4	P ≤ 0.0001; OR = 4.7; 95%CI = 2.7 - 8.3	38 (8.4%)	10 (2.3%)	15 (2.2%)	P ≤ 0.0001; OR = 3.9 95%CI = 1.9 - 8.1	P ≤ 0.0001; OR = 4; 95%CI = 21.2 - 7.4

** 2n Each individual carries two alleles, so there are 2n alleles within a population.*

gions. Moreover, *DQB1*03:01* was also confirmed as a susceptible allele in NWA. *DQB1*06:01* exhibited the strongest association for susceptibility in both regions (Table 1). The compound heterozygote of the protective allele *DQB1*03:02* and the susceptible allele *DQB1*06:01* was significantly associated with protection against CHB in MET, but with the opposite effect (susceptibility to CHB) in NWA. **Conclusion.** The effect of susceptible and protective HLA-DQB1 alleles against CHB differs in populations with a major Native American or European ancestry component. Although further studies are needed, these susceptible genotypes could be beneficial to identify patients with acute hepatitis B who may need a closer follow-up.

P-65
REAL-LIFE EFFECTIVENESS OF DIRECT ACTING AGENTS (DAAS) FOR HCV TREATMENT IN BRAZIL AND MODIFICATION OF LIVER STIFFNESS MEASUREMENTS AFTER SUSTAINED VIROLOGIC RESPONSE

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Introduction. Real-life data on sustained virologic response (SVR) of HCV treatment by DAAs in Latin America and modification of liver stiffness measurements (LSM) after SVR still lacks. **Aims.** To evaluate DAA effectiveness in a large real life cohort of HCV patients and to describe the changing of LSM post-SVR. **Material and methods.** Retrospective study of consecutive HCV patients treated by DAAs in two Brazilian centers. Lost of follow-up (n = 9) and missing data (n = 13) of SVR were exclusion criteria. For the analysis of LSM changing, patients without (n = 100) or unreliable (n = 52) LSM or LSM performed with distinct probes (n = 44) were excluded. **Results.** 513 patients [64% female, mean age 62y; 64% cirrhosis; 8% HIV co-infection; 89% gen 1; 65% naive; 74% SOF / DCV ± RBV and 21% SOF / SIM ± RBV]. SVR rates [95%CI]: overall = 98.4% [96.9-99.2]; cirrhosis = 97.9% [95.6-0.990] (*vs.* 99.5% [96.2-99.9] non-cirrhotics); HIV-infected = 97.6% [84.2-99.7] *(vs.* 98.5% [96.9-99.3] without HIV); SOF/DCV ± RBV = 99.0% [97.2-99.6], SOF / SIM ± RBV 97.3% [91.8-99.1]). A total of 314 patients [F0F1 = 13%; F2 = 9%; F3 = 24% and F4 = 54%] were included in the analysis of LSM post-SVR, in a median of 8 [IQR, 4-13] months. LSM [median (range)] significantly decreased post-SVR [from 13.6 kPa (3.1-75.0) to 10.3 kPa (2.6-70.6); $p < 0.001$]. In cirrhotic patients (LSM ≥ 12.5kPa, n = 170) pre-treatment, 13% (n = 22) has changed to F3, 11% (n = 18) to F2 and 8% (n = 14) to F0F1 according to the post-SVR LSM ($p < 0.001$). A total of 53% (n = 167) has reduced at least 20% of LSM in post-SVR compared to pre-DAA treatment. This condition was associated [HR (95%CI)] with genotype 2 [3.72 (1.13-12.30)], absence of diabetes [1.48 (1.03-2.12)], platelet count > 150 x 10^9 / mm^3 [1.72 (1.20-2.46)] and treatment-naive [1.47 (1.03-2.08)] independently of fibrosis in a multivariate model adjusted for age and gender. **Conclusion.** DAAs were highly effective for erradication of HCV. Thrombocytopenia and diabetes were associated with a lower likelihood of LSM improvement.

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IMPAIRED ANTI-HBV VACCINE RESPONSE IN NON-CIRRHOTIC CHRONIC HCV PATIENTS IS NOT OVERCOME BY DOUBLE DOSE REGIMEN: A RANDOMIZED CONTROL TRIAL

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Background. Anti-HBV vaccine in chronic HCV patients demonstrated a diminished anti-HBs response, 63.6% to 72.9%, compared to 90.9% to 93.9% in healthy controls. **Aims.** To evaluate the anti-HBs response to standard compared to double dose HBV vaccination and in non-responders administer the fourth dose of vaccine (Butang®) in chronic HCV patients without cirrhosis. **Material and methods.** 141 chronic HCV patients were randomized to receive double dose (40 μg) or standard dose (20 μg) at 0, 1 and 6 months. Anti-HBs titers were measured at 1 month after last dose. 70 healthy controls received standard dose (20μg). Vaccine response was defined by anti-HBs ≥ 10 U/L. Non-responders received the fourth dose according to the group that were previously randomized. **Results.** 68 standard doses and 60 double dose completed the study. Median age 51 yrs, 61% female, 52% white, 40% F2-3, and 75% GT1, median 6 $\log_{10}$ HCV RNA. Overall seroconversion rate was 76.7% (63-84%) in double dose and 73.5% (65-87%) in standard dose, compared to 91.2% in controls ($p = 0.02$ and 0.008). Median anti-HBs titers in HCV groups were not significantly different from controls (205 *vs.* 432 UI/L, $p = 0.66$). In a logistic regression model evaluating the association between vaccine group and anti-HBs seroconversion, vaccine regimen was not an independent predictor of response ($p = 0.69$). Twenty-three patients received the fourth dose; 7 seroconverted (30.4%) and seroconversion rate for double and standard doses were 42.9% and 11.1%, respectively ($p = 0.18$). Controlling for confounders including age, sex, ethnicity, and genotype, only older age ($p < 0.001$) and GT1 ($p = 0.005$) were associated with a decreased anti-HBs response. **Conclusions.** In HCV-infected patients without cirrhosis, responses to HBV vaccination are significantly impaired and this reduced response cannot be overcome by the use double dose and/or 4th dose HBV vaccination. **Conflict of interests.** None.

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EFFICACY AND SAFETY OF LAMIVUDINE OR TENOFOVIR TREATMENT IN PATIENTS WITH B-VIRUS CIRRHOSIS IN REAL CLINICAL PRACTICE

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Introduction. Lamivudine and tenofovir inhibits the DNA synthesis of hepatitis B virus, which favors the arrest of progression of cirrhosis and the development of complications. **Objectives.** To evaluate the efficacy and safety in clinical practice of lamivudine or tenofovir treatment in patients with cirrhosis compensated for hepatitis B virus. **Material and methods.** A descriptive, prospective, longitudinal study was carried out in patients with B-virus cirrhosis (HBsAg and DNA-HBV positives) attended at the Institute of Gastroenterology in Havana, between January 2013-January 2018. The drugs used were lamivudine (100 mg daily) or tenofovir (300 mg daily). The effectiveness was assessed according to the decrease of ALAT and the undetectability of the DNA. The frequency with which major complications occurred, hepatocellular carcinoma, liver transplantation, or death was determined. Data were processed with descriptive statistical. **Results.** 69 patients, 64.3% male, mean (SD) for the age of 56.7 (12.3) years were included. Viral load average: 4.9 (1.3) log10 UL/mL, ALAT 99.3 (24.2) μmol/L. Mean follow up was 43.7 months. 57 (82.6%) with compensated cirrhosis (5-6 points Child) and 12 (17.3%) decompensated (more than 7 points Child). The DNA was undetectable in 38.4%; 66.2%; 74.5%; 92.6%; 97.1% and 98.4% of patients at 3, 6, 12, 24, 36 and 48 months, while ALAT normalization was observed from the first 6 months of treatment in 88.5% of cases. In 39 (56.5%) patients, lamivudine was replaced by tenofovir before the onset of biochemical or virological relapse. During the follow-up, 9 patients (13%), 2 (2.8%) were transplanted and in 13 (18.8%), a hepatocellular carcinoma was detected. No adverse reactions were produced to the drugs used. **Conclusions.** The effectiveness of lamivudine and tenofovir as antiviral treatment in cirrhotic patients is confirmed.

Table 1 (P-66). Distribution of seroprotection according to the vaccine group.

	Double dose	Standard dose	Healthy controls
Number of patients	60/71	68/70	68/70
Anti-HBs = 10 mUI/mL	46	50	62
Overall seroconversion rate	76.7% IC95%: 63-84	73.5% IC95%: 65-87	91.2% IC95%: 84-99
Seroconversion to 4th dose of vaccine	6/14 (42.9%)	1/9 (11.1%)	ND

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EFFICACY AND SAFETY WITH THE USE OF SIMEPREVIR, DACLATASVIR OR LEDIPASVIR IN COMBINATION WITH SOFOSBUVIR IN THE TREATMENT OF HEPATITIS C GENOTYPE 4 INFECTION IN A COHORT OF PATIENTS WITH HIV INFECTION IN COLOMBIA

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Introduction. The combination of sofosbuvir with other direct antiviral analogs, such as daclatasvir, simeprevir and ledipasvir has shown its effectiveness in genotype 1. However, the data in genotype 4 are scarce. Additionally, the presence of co-infection with HIV causes faster progression to fibrosis and cirrhosis. **Objective.** Describing the experience in patients with HIV infection and hepatitis C genotype 4 using treatment with sofosbuvir in combination with daclatasvir, ledipasvir, and simeprevir. **Material and methods.** We conducted an observational descriptive cohort study between January 2016 and December 2017, including 14 patients with HIV infection with average CD4 of 256 and HIV viral load undetectable. The treatment for HIV was tenofovir, emtricitabine with efavirenz in 7 patients (50%, and dolutagrevir, abacavir and lamivudine in 7 patients (50%). All were men (100%) with Hepatitis C genotype 4 with an average age of 39.5 years, being treated with sofosbuvir and ledipasvir 9 patients (64%) daclatasvir with sofosbuvir 4 patients (29%) sofosbuvir simeprevir 1 patient (7%) during 12 weeks. All 14 patients completed the full 12 weeks of dosing. The mean value of fibrosis obtained with transient fibroelastography was 6.1 (4-12.5). The median pretreatment HCV - RNA $\log_{10}$ was 5.32 (2.77-6.78). **Results.** The primary endpoint was the percentage of patients with HCV RNA < 15 IU/mL 12 weeks after stopping therapy (SVR 12) , and the identification of adverse events between the patients. All patients achieved a sustained viral response at 12 weeks SVR 12 (100%). No patients experienced a serious adverse event. The most adverse event were headache in 7 patients (50%) during the first 4 weeks of treatment and asthenia in 3 patients (21%), solving after the 4 weeks of treatment. **Conclusion.** Our study confirms the efficacy of direct antiviral analogs combined with sofosbuvir generates a sustained viral response at 12 weeks after treatment ends, independent of the presence of retrovirus infection.

P-80
RESULTS OF TREATMENT OF HCV HEPATITIS WITH ZEPATIER (ELBASVIR/GRAZOPREVIR) IN REAL LIFE

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Introduction. Elbasvir Grazoprevir (EBR/GZR) is indicated for the treatment of chronic HCV infection genotypes 1 and 4, and it has shown high rates of sustained virological response (SVR) in clinical trials. The objective of this study is to evaluate the real-world effectiveness of EBR/GZR in our patients. **Material and methods.** Between April 2017 and April 2018, we treated 18 patients with chronic viral hepatitis C in our hospital. They were 13 men and 5 women, with a median age of 64. Fourteen patients were infected with genotype 1b, 1 with genotype 1a and 3 with genotype 4. According to the stage of fibrosis, 3 patients had stage F4 (all of them compensated), 4 F3, 8 F2 and 2 patients F1. In all cases, except one, the duration of Zepatier was 12 weeks. The other patient, who had chronic renal disease, received 16 weeks of EBR/GZR plus Ribavirin.2 patients had received previous treatment with Pegylated Interferon plus Rbavirin, with no response. **Results.** Seventeen patients completed treatment; one patient abandoned it at week 9. All 18 patients achieved end-of-treatment virologic response. All 18 patients have obtained sustained virological response (SVR12), including the patient who did not complete treatment (100%). Therapy was well tolerated; the most common complaints were mild fatigue and headache, but they did not interfere with normal daily activities of treated persons. **Conclusions.** EBR/GZR is highly effective in HCV-infected patients genotype 1 and 4, independently of fibrosis. Treatment is very well tolerated, with minor adverse events.

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RESPONSE TO TREATMENT WITH ENTECAVIR IN PATIENTS WITH CHRONIC HEPATITIS B GENOTYPE F

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Introduction. Entecavir (ETV) is one of the first-line treatments for chronic hepatitis B. Currently, only virological and serological response data exist for genotypes A, B, C and D. In Chile, the most frequent genotype is F, of which there are no studies on the response to treatment with ETV. **Objective.** To evaluate ETV treatment response in patients with chronic hepatitis B genotype F. **Material and methods.** Descriptive study. We measured viral and serological response in 32 patients with chronic hepatitis B genotype F treated with ETV with a follow-up average of 46.6 months (range 17 to 120 months). **Results.** Seventy six percent of HBeAg positive patients negativized this antigen after a mean of 19 months of treatment, with the appearance of anti-HBe in 72% at 22 months. Twenty five percent negativized the surface antigen (HBsAg) after an average of 45 months and 18% developed anti HBs at 42 months of treatment. At the end of follow-up, 63% had a negative viral load and 25% < 35 copies / mL. Median age was of 54 years (range 18 to 80 years), 96% male sex, 86% Antigen e (HBeAg) positive and 32% with cirrhosis. Only 2 patients developed resistance to ETV. **Conclusion.** Treatment with ETV is effective for chronic hepatitis B genotype F, considering virological and serological response. The negativization of HBsAg in this sample was higher in comparison with published data for other HBV genotypes.

P-89
DRIED BLOOD SPOT SAMPLES AS ALTERNATIVE SPECIMEN FOR HEPATITIS C DIAGNOSIS

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HCV and HIV infection are chronic diseases with treatment. Hepatitis C can be cured, the main challenge is still the early diagnosis so that the treatment is performed before the disease progresses. The development of more accessible diagnoses to populations and geographic areas is important for increased diagnosis. We review the work developed by our research group on the diagnosis of HCV using the alternative dried blood spot (DBS). We evaluated the detection of anti-HCV in DBS through multiple factors, different commercial tests and in different populations: HCV+, HIV/HCV+ and negative controls. We evaluated the Radim EIA test in DBS that showed sensitivity and specificity of 97.5% and 99.5%, and DiaSorin EIA with 88.9% and 98.9%. Both showed the same detection limit (1:10 dilution with viral load of 3.1 x 10 (-1) IU/mL), but the Radim EIA was associated with better performance due to a low coefficient of variation. In our second HCV monoinfected study we evaluated the assay, HCV AgAb (Monolisa™ HCV AgAb ULTRA and Murex HCV AgAb). This analysis showed a specificity of 99.7% for the AgAb test (Monolisa™ HCV AgAb ULTRA and 95.95% for Murex HCV AgAb and a sensitivity of 97.5% for both. Subsequently, we evaluated the use of DBS for the diagnosis of HCV also in HIV coinfected individuals. In 961 subjects divided into HCV^+, HIV^+, HIV/HCV^+ and negative controls. Serum and DBS samples were compared in the anti-HCV test (Murex HCV AgAb). Sensitivities were higher than 93% using DBS in the HCV^+ group, whereas for HIV/HCV^+ 83.3%. The specificity reached 100% in monoinfected HIV individuals and negative controls. When we considered only HCV RNA^+ samples, the sensitivities in DBS were 98.3% in HCV^+ and 91.6% in HIV/HCV^+ and low HIV viral load (less than 50 copies/mL). Commercial EIAs can be optimized for anti-HCV detection in DBS. They perform well in the tests used and excellent stability between various storage conditions in relation to serum. The use of DBS for the detection of anti-HCV can be performed in HCV^+ individuals and coinfected with HIV, especially in active cases of HCV, with HCV RNA^+. However, DBS was found to be less sensitive in HIV/HCV^+.

P-90
NEW DIRECT ACTION ANTIVIRALS (DAA) CONTAINING REGIMES TO TREAT PATIENTS WITH HEPATITIS C CHRONIC INFECTION: FIRST RESULTS FROM A MULTICENTER REAL-WORLD REGISTRY OF THE NORTHEAST BRAZIL

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Introduction and aim. Hepatitis C treatment whit new DAAs shows SVR rates above 90%. The aim of this historical cohort study is to describe the sustained virologic response (SVR) rate among real-world compensated chronic hepatitis C patients in Northeast Brazil. **Material and methods.** All patients treated in Ceará State between October 2015 to May 2018 was invited for this study if they had at least 12 weeks follow-up after the end of therapy. **Results.** SVR was analysed in 623 patients. Mean age was 57,4 years, (62%) male. Genotype 1 was present in 74.4% (n = 460); genotype 3 in 22.6% (n = 140) genotypes 2 in 2.1% (n = 13); others genotypes (n = 5); (46.8%, n = 292) were cirrhotic, (32.6%, n = 203) were treatment experienced, (26.8%, n = 167) were transplanted (liver or kidney) and (5.45%, n = 35) were HIV+. Global SVR-12 was achieved in 594/623 (95.4%), 92,8% in cirrhotic patients, 95% treatment experienced, 95.7, 8% in liver/kidney transplanted patients and 97.1% in HIV+ patients. The efficacy treatment was: sofosbuvir (SOF) + ribavirin (RBV) (83.3%; n = 12); SOF + simeprevir (SMV) ± RBV (98.5%; n = 130); SOF + pegylated interferon (PEG - IFN) + RBV (100%; n = 2); SOF + daclatasvir (DCV) ± RBV (94.9%; n = 473) and paritaprevir / ritonavir + ombitasvir + dasabuvir (PTVr / OBV / DSV) ± RBV (100%; n = 5). Genotype efficacy was worse in genotypes 2 (83.3%; n = 12) and genotype 3 (89.2%; n = 139) and better in genotype 1 (97.6%; n = 463), being similar in genotype 1a (98.2%, n = 164) and genotype 1b (97.1%, n = 276). All genotype 2 patients were treated with SOF + RBV and most G3 patients were cirrhotic and were treated only for 12 weeks with SOF+DCV. **Conclusions.** In this case, low RVS was seen in patients with genotype 2 treated with SOF + RBV and genotype 3 treated for 12 weeks.

P-92
INCIDENCE AND OUTCOME OF ACUTE HEPATITIS E INFECTION IN THE METROPOLITAN AREA OF BUENOS AIRES

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Introduction. Argentina is considered a region of low endemicity for acute hepatitis E virus (HEV) infection, but its incidence is unknown. **Aims.** To estimate the incidence and outcome of acute HEV in a cohort of patients with acute hepatitis from 6 liver units in the Metropolitan area of Buenos Aires (AMBA). **Material and methods.** Prospective cohort study including patients ≥ 18 years of AMBA with acute hepatitis (increase in transaminases x 5 ULN) from August 2015 to May 2018. Severe hepatitis was defined as acute hepatitis + INR > 1.5 and fulminant hepatic failure as severe hepatitis + encephalopathy. In patients in whom other etiologies were excluded, HEV tests were performed: anti-HEV IgM/G and HEV-RNA in serum and feces. Patients were divided into two groups; non-transplanted and transplanted. **Results.** 276 patients with acute hepatitis were included, of whom 8 were transplanted. In the non-transplanted group, the most frequent etiologies of acute hepatitis were: hepatitis B (67 patients, 25%), hepatotoxicity (65, 24%) and autoimmune hepatitis (26, 10%). Severe hepatitis was developed by 48 (18%) patients, 8 (3%) have fulminant hepatic failure and 6 (2.2%) underwent liver transplantation. A total of 63 (23.5%) patients were hospitalized and 9 (3.3%) patients died. Overall, 66 (25%) patients with unclear diagnosis of acute hepatitis were tested HEV (Table 1). The incidence of acute HEV infection was 2.89% (95%CI 1.25-5.63). In the transplanted group, 8 patients were tested for HEV and 2 patients were diagnosed with HEV infection. HEV infection in transplanted patients was resolved by reducing immunosuppression. **Conclusions.** In patients with acute hepatitis the incidence of acute HEV in AMBA was low during the period studied, furthermore; HEV infection outcome was mild in most of the patients. The high incidence of acute hepatitis B reported in this study underscores the need to reinforce vaccination in the adult population.

Table 1 (P-92). Clinical characteristics of patients with acute HEV infection.

Patient	Gender/Age	Transplanted	IgM	IgG	HEV-RNA		ALT	Clinical	Outcome
					Sera	Feces	(ULN)	Presentation	
1	F/49	No	+	+	+	+	x 13	Anicteric	Acute hepatitis
2	M/44	No	+	+	+	+	x 6	Anicteric	Acute hepatitis
3	F/43	No	+	+	-	+	x 5	Anicteric	Severe acute hepatitis
4	M/54	No	+	+	-	-	x 24	Anicteric	Acute hepatitis
5	M/43	No	+	+	+	-	x 12	Icteric	Acute hepatitis
6	M/39	No	+	+	ND	ND	x 28	Icteric	Acute hepatitis
7	F/42	No	+	+	-	-	x 5	Anicteric	Acute hepatitis
8	F/68	No	+	+	-	ND	x 5	Anicteric	Acute hepatitis
9	M/66	Liver	+	+	+	+	x 5	Anicteric	Acute hepatitis
10	F/39	Kidney-liver	+	+	-	-	x 5	Anicteric	Acute hepatitis

ND: not-done. ULN: upper limit normal.

P-94
ECHO MODEL PROVED TO BE A USEFUL TOOL TO INCREASE CLINICIANS' SELF-EFFICACY FOR CARE OF PATIENTS WITH HEPATITIS C IN ARGENTINA

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Background. The Extension for Community Health Care Outcomes (ECHO) model was developed to expand access to medical care for populations with hepatitis C virus (HCV) infection in areas with limited resources. **Aims.** To evaluate physician's improvement in their medical skills to provide best medical care for patients with HCV and to compare HCV treatment outcomes with those treated at a university HCV clinic. **Material and methods.** In October 2015 we established an HCV ECHO clinic at the Austral University Hospital (HUA) in Pilar, Argentina, were training and support is provided to 15 physicians from 11 different Argentinean provinces. A survey of 9 questions evaluating skills and competence in HCV care before and after 1-year of participating in the project was compared and effectiveness was assessed from LALREAN's prospective database. **Results.** Since the implementation of ECHO clinics at HUA, 34 tele-echo sessions have been conducted with 174 case presentations. A total of 22 physicians participated in at least one session (median 9.5; IQR 3.0-15.7) and the median case presentation per clinician was 5 (IQR 0-11.5). Thirteen physicians completed the survey reporting a significant improvement in all the evaluated skills and an increased competence in the abilities evaluated (Table 1). During the study period, 518 patients were placed on treatment for HCV infection DAA and SVR12 was assessed in 358 patients. A total of 95.2% of the patients treated at HUA HCV clinic (198 of 208 patients) and 96% of those treated at ECHO sites (144 of 150 patients) had SVR12 (difference in rates between sites, 0.8% points; 95% IC, 0.75-0.83; P = NS). **Conclusions.** Replicating the ECHO model helped to improve participants' skills and reduced professional isolation in the management of HCV achieving high SVR rates. ECHO model should be included as an intervention to achieve the WHO goals to eliminate HCV by 2030.

P-96
PREVALENCE OF BASELINE NS5A AND NS5B RESISTANCE-ASSOCIATED SUBSTITUTIONS IN BRAZILIAN PATIENTS INFECTED WITH GENOTYPES 1a AND 1b TREATED WITH DACLATASVIR AND SOFOSBUVIR

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Introduction. In Brazil, the most prevalent genotypes of hepatitis C virus (HCV) are 1a and 1b. Daclatasvir (NS5A inhibitor)

Table 1 (P-94). Survey evaluating skills and satisfaction before and after participation in Project ECHO.

	Before tele-ECHO sessions*	After tele-ECHO sessions*	P value
Ability to identify candidates who should be treated	5 (3.5-6)	7 (6-7)	0.003
Ability to stage liver fibrosis	6 (5-7)	7 (6-7)	0.005
Ability to identify different DAA	5 (4-6)	7 (7-7)	0.001
Ability to identify potential DAA combinations	5 (4-5)	6 (6-7)	0.001
Ability to recognize approved DAA in Argentina	6 (3.5-6)	7 (6.5-7)	0.003
Confidence to treat patients with hepatitis C	5 (4-5.5)	7 (6.5-7)	0.001
Ability to serve as a consultant within my clinic and in locality for HCV issues	5 (4.5-5.5)	7 (6-7)	0.001
Possibility to access a second opinion	4 (4-5.5)	7 (7-7)	0.001
Possibility to rapidly access a second opinion	4 (3-5)	7 (6-7)	0.001

*The survey consists of 9 questions which focus on skills and competence in hepatitis C. Each question is rated from 1 to 7 (1 worst scenario; 7 best scenario). (n = 13) Wilcoxon signed-rang test was performed. * Results are present in median and interquartile range.*

and sofosbuvir (NS5B inhibitor) are direct-acting antiviral (DAA) approved for combined IFN-free therapies available in Brazil. Pre-existing resistance-associated substitutions (RASs) at baseline have been associated with daclatasvir and sofosbuvir resistance. **Aim.** Determine the prevalence of RASs in HCV NS5A and NS5B genes in monoinfected and HCV / HIV-coinfected patients infected with genotypes 1a and 1b before daclastavir/sofosbuvir therapy. **Material and methods.** A total of 91 serum samples from HCV monoinfected patients (HCV-1a: n = 46; HCV-1b: n = 45) and 21 from HCV/HIV-coinfected patients (HCV-1a: n = 9; HCV-1b: n = 12) was collected at baseline before 12-week treatment with daclastavir/sofosbuvir. Methodology included viral RNA extraction, PCR reactions with specific primers for each genotype and purification followed by nucleotide sequencing reaction of NS5A and NS5B genes (~1,500 bp). Amino acid changes M/L28, Q/R30, L31 and Y93 for NS5A gene and L159, S282, V321 and C316 for NS5B gene were evaluated. **Results.** Considering monoinfected patients (n = 91), NS5A RAS L31M (1 / 46; 2.2%) was observed for HCV-1a and RASs L28M (6 / 45; 13.3%), R30Q (7 / 45; 15.6%), L31M (4 / 45; 8.9%) and Y93H (3 / 45; 6.7%) for HCV-1b. As for NS5B gene, no RASs were identified for HCV-1a whereas L159F (14 / 45; 31.1%) and C316N (14 / 45; 31.1%) were observed for HCV-1b. Considering HCV/HIV-coinfected patients (n = 21), only were identified NS5A and NS5B RASs for genotype 1b. RASs L28M (4 / 12; 33.3%) and R30Q (4 / 12; 33.3%) for NS5A gene and L159F (2 / 12; 16.7%) and C316N (3 / 12; 25%) for NS5B gene. **Conclusion.** Higher prevalence of NS5A and NS5B RASs was identified in HCV genotype 1b for monoinfected (NS5A: 44.5%; NS5B: 62.2%) and HCV/HIV-coinfected (NS5A: 66.6%; NS5B: 41.7%) patients.

P-97
HEPATITIS C TREATMENT WITH DIRECT ACTION ANTIVIRAL DRUGS IN LIVER TRANSPLANTATION

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Introduction. In patients transplanted with hepatitis C with detectable viral load, graft infection is almost universal, with rapid progression to cirrhosis in about 20% to 30% of patients 5 years after transplantation. Pre-treatment with peg interferon (IFN-Peg) and ribavirin (RBV) for 48 weeks presented a favorable response in only 55% of the patients, with high morbidity. **Objectives.** We evaluated the efficacy and safety of the combined use of direct-acting antivirals (AADs), associated or not with RBV, for the treatment of recurrence of hepatitis C in patients after hepatic transplantation (TxH), including all genotypes and degrees of fibrosis. **Material and methods.** We included 125 patients for treatment with sofosbuvir (SOF) and daclatasvir (DCV) or simeprevir (SMV). RBV was associated with medical criteria. We included naïve or already experienced patients with genotypes 1, 2 or 3 and at least 3 months post-transplant, without evidence of moderate or severe rejection. The evaluation of fibrosis was performed by hepatic biopsy and / or elastography. Clinical evaluation and laboratory tests were performed before and at weeks 2, 4, 8, 12, 16, 20 and 24. HCV-RNA was measured by quantitative PCR in real time at weeks 4, 12 / 24 and at week 12 after end of treatment. The primary endpoint was the assessment of sustained virological response (SVR): undetectable HCV-RNA after 12 weeks of treatment termination. Secondary objectives: safety / adverse effects, interaction with immunosuppressive drugs. **Results.** The mean age was 60.9 years; 72% of males; Experimented with IFN-Peg / RBV in 43.2%. CHC as an associated indication of TxH in 56%; Mean time between TxH and treatment 48.7 months; 50% genotype 1b; 20% genotype 1a, 24% genotype 3 and 3% genotype 2. 81% fibrosis F0 / F1 and 11% F3 / F4. The main therapeutic regimen was SOF + DCV + RBV for 12 weeks (67.2%). RBV was used in 70.4% and of these 20.4% reduced the dose and 6.8% suspended. Side effects were mild in 43.2%. 33.6% of the patients required adjustment in the doses of the immunosuppressants. There were no interruptions or deaths during treatment. The overall RVS was 97.6%. There was no significant difference between those who used 2 DAA + RBV (98.8%) and only 2 DAA (97.2%). **Conclusion.** Treatment with DAA is effective and safe in post-transplant hepatitis C relapse, regardless of genotype and degree of fibrosis. SVR was 97.6%. The combination of SOF and DCV with or without RBV for 12 weeks was the main regimen used. The data suggest that RBV is dispensable for the treatment of these patients.

P-107
PREVALENCE OF BASELINE RESISTANCE-ASSOCIATED SUBSTITUTIONS TO NS5A AND NS5B IN PATIENTS INFECTED WITH HEPATITIS C VIRUS GENOTYPE 1 IN ARGENTINA

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Introduction. Incorporation of direct acting antivirals (DAA) in the treatment against hepatitis C virus (HCV) significantly increases sustained virologic response (SVR) rates. However, drug resistance plays a key role in patients who do not achieve SVR. Nevertheless, information about the prevalence of resistance-associated substitutions (RAS) in Argentina is scarce. **Objective.** The aim of this study was to analyze RAS to NS5A and NS5B inhibitors in treatment-naïve patients infected with HCV genotype 1 from a tertiary care center in Buenos Aires, Argentina. **Material and methods.** In this retrospective cross-sectional study, 79 patients infected with HCV-1 were analyzed

for NS5A and 72 for NS5B. In particular, 17 positions related to RAS were analyzed in this study: M28, Q30, L31, P32, H58, T64, A92 and Y93 for NS5A and S96, N142, L159, E237, S282, C289, C316, L320 and V321 for NS5B. **Results.** RAS were more frequent in NS5A than in NS5B (16.4% *vs.* 2.7%; p: 0.005). RAS to NS5A inhibitors were detected as follows: L31M 5 (6.32%), H58L / R 2 (2.52%), T64S 2 (2.52%), A92T / V 2 (2.52%) and Y93H 2 (2.52%). Five out of 20 (25%) patients infected with HCV-1a and 8 / 59 (13.5%) with HCV-1b presented basal RAS (p = 0.23). For NS5B, none of the 26 patient infected with HCV-1a had RAS in NS5B. On the other hand, 2/46 (4.3%) subjects infected with HCV-1b had RAS. One patient presented a RAS in L159F and the other a double RAS (L159F and C316N). **Conclusion.** As it was reported in previous studies, RAS were more frequent in NS5A than in NS5B. The prevalence of each RAS in NS5A varies markedly depending on the geographic region analyzed. In this sense, the present study supports the need for more molecular epidemiology studies on RAS in order to adjust local treatment guidelines with the incorporation of autochthonous data.

P-108
CHARACTERIZATION OF INTRAHEPATIC IMMUNE CELL POPULATION AND VIRAL ANTIGENS IN RELATION TO LIVER DAMAGE IN THE CONTEXT OF CHRONIC HEPATITIS B VIRUS INFECTION

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Introduction. In chronic hepatitis B (CHB), immune response is thought to be responsible for liver damage. In this scenario viral antigen expression may also have a key role in liver pathogenesis. **Objective.** We aimed to study the interplay between intrahepatic immune response and viral activity in relation to CHB liver damage. **Material and methods.** Immunostaining was performed in 29 liver biopsies from CHB untreated patients (38% HBeAg+) to characterize: 1) liver infiltrate [Th (CD4+), CTL (CD8+), Treg (FoxP3+), Th17 (IL-17A+) and Th1 (Tbet+)]. Quantification: portal area: positive / total lymphocytes, lobular area: positive lymphocytes / field in 10 fields; (400x)]; 2) HBsAg and HBcAg expression. Inflammatory activity and fibrosis were assessed using the modified Knodell and METAVIR scoring system. **Results.** All studied populations were identified in the portal/periportal areas with a Th cell predominance, while only CTLs were observed in the lobular area. Both portal / periportal Th and lobular CTL frequencies were increased among severe hepatitis cases (p = 0.002 and p = 0.01, respectively) while Th17 subset showed a trend of association with significant fibrosis (p = 0.05). Concerning HBsAg and HBcAg expression, a mutually exclusive pattern was seen. HBcAg liver expression was related to serological HBeAg presence (p = 0.001) and hepatitis severity (p = 0.005). Moreover, HBcAg was associated with a higher frequency of Treg and lobular CTL (p = 0.02 and p = 0.04, respectively). HBsAg was detected in cases with the lowest Th cells count (p = 0.003). Finally, HBeAg+ cases exhibited a higher frequency of Th (p = 0.002) due to the Treg subpopulation (p = 0.001). **Conclusion.** The HBV antigen profile expression seen during CHB infection may be reflecting different stages of viral replication and damage process. The presence of hepatic HBcAg might be an indicator of active viral activity and an inducer of a regulatory microenvironment. On the other hand, Th17 could be contributing to fibrosis generation while CTL population seemed to have a key role in hepatitis severity.

P-109
ANALYSIS OF CXCL-9, AND IL-29 IN PATIENTS WITH CHRONIC HEPATITIS C INFECTION

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Introduction. Liver fibrosis is the result of progressive accumulation of fibrillar extracellular matrix in chronic fibrogenic response related to viral infections, toxic or drug agents, metabolic and autoimmune causes. Although innate immune reactions dominate in the liver during the initial response to injury, adaptive immune cells, namely B and T lymphocytes, are vitally involved in the pathogenesis of hepatic inflammation during conditions of chronic liver damage. Particularly in HCV infection, the production of cytokines and chemokines are closely related to the progression of fibrosis. Cytokine IL-29 and Chemokines CXCL-9 play an important role in chronic hepatitis C virus infection as they are expressed by activated liver myofibroblasts with an overall chemotactic activity for lymphocytes (3). **Aim.** To measure seric concentration of IL-29 and CXCL-9 in patients with chronic hepatitis C infection and analyze the relation with liver fibrosis. **Material and methods.** Cross-sectional, prospective, observational and descriptive study. Patients with compensated HCV and a control group were included. IL-29 and CXCL-9 were determined with Luminex technology (Biorad, EU). Data were analyzed by Kruskall-Wallis, statistically significant differences were considered from p < 0.05. **Results.** 105 HCV patients and 100 controls were studied. The mean age was 51.3 ± 12.2 and 36.6 ± 10.3 years, BMI 26.5 ± 3.5; 28.3 ± 4.2; respectively. IL-29 values expressed as median (min-max) were 195.3 (91.7-735.1) and 195.3 (0.02-735.8) pg/mL, and CXCL-9 were 2238.3 (48.8 - 14977.2) and 1105.7 (42.1 - 100205.0) pg/mL respectively. There was difference between the CXCL9 group (p= 0.0001). **Conclusions.** Levels of IL-29 in HCV patients and controls was similar so it does seem to participate in fibrogenesis. The concentration of

CXCL-9 was higher in patients with HCV than in the control group, this suggests that this chemokine plays a primary role in perpetuating liver damage in the inflammatory and fibrogenic process.

P-111
THE IMPACT OF HEV INFECTION ON THE DISEASE SEVERITY OF PATIENTS WITH CHRONIC HCV INFECTION

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Introduction. In Brazil, hepatitis E (HEV) is rare, with prevalence ranging from 1% to 12.9% in healthy subjects. The effect of HEV coinfection, however, has not been sufficiently studied. **Aims.** 1. To determine the prevalence of HEV infection among patients with chronic hepatitis C virus, assessing the impact of coinfection on liver disease severity. 2. To evaluate histological characteristics of HEV infection in HCV-HEV coinfected patients. **Material and methods.** Observational and cross-sectional study. Samples were collected from 2013 to 2016. Inclusion criteria: consecutive chronic HCV adults; naïve for HCV treatment. Exclusion criteria: HBV or HIV infection. HEV serology was performed with IgG and IgM antibody assays (ELISA, Mikrogen, Germany) and, HEV RNA by Virus Spin (Qiagen, United States of America). Liver histology was analyzed with a 1:2 pairing of monoinfected and coinfected patients. **Results.** Anti-HEV IgG was positive in 22/181 (12%) patients, anti-HEV IgM was positive in 3/181 (1.6%) patients and real time HEV RNA was positive in 9/181 (4.9%) patients. When comparing patients with and without HEV coinfection, we observed a significant difference in the following laboratory parameters: APRI score ($p = 0.013$), albumin ($p = 0.01$), total bilirrubin ($p = 0.007$), platelets ($p < 0.001$) and INR ($p = 0.032$). Of the 96 patients who underwent liver biopsy, 11 had a positive serological marker for HEV. No particular histological abnormality controlling for age, gender, HCV genotype and grade of liver fibrosis. Could be attributed to HEV coinfection when compared to HCV monoinfected patients. **Conclusion.** Prevalence of anti-HEV IgG (12.0%) in chronic HCV infection was not higher than in the general population. HEV infection had an important impact on severity of liver disease in chronic HCV patients. When paring liver biopsies with the same amount of fibrosis we could not observe any particular characterirstic of HEV coinfection.

Table 1 (P-111). Compared of HEV positive with HEV negative relatively with category variable.

	Hepatitis E		Total	OR	IC95%		Value p
	No, n(%)	Yes, n (%)			Inf	Sup	
Fibrosis							
Grau ≤ 2	95 (90.5%)	10 (9.5%)	105	1			
Grau ≥ 3	54 (71.1%)	22 (28.9%)	76	3.87	1.7	8.7	0.001
Total	149 (82.3%)	32 (17.7%)	181	-	-	-	-
Esophageal varices							
No	112 (86.8%)	17 (13.2%)	129	1			
Yes	31 (68.9%)	14 (31.1%)	45	2.97	1.32	6.69	0.007
Total	143 (82.2%)	31 (17.8%)	174	-	-	-	-
Encephalopathy							
No	138 (83.1%)	28 (16.9%)	166	1			
Yes	3 (50.0%)	3 (50.0%)	6	4.92	0.94	25.6	0.073
Total	141 (82.0%)	31 (18.0%)	172	-	-	-	-
Ascite							
No	134 (84.8%)	24 (15.2%)	158	1			
Yes	9 (56.3%)	7 (43.8%)	16	4.34	1.47	12.7	0.010
Total	143 (82.2%)	31 (17.8%)	174	-	-	-	-
CHILD-PUGH score							
A	36 (80.0%)	9 (20.0%)	45	1			
B	10 (52.6%)	9 (47.4%)	19	3.6	1.12	11.4	0.036
Total	46 (71.9%)	18 (28.1%)	64	-	-	-	-

P-113
ANTIVIRAL RESISTANCE MUTATION DETECTION IN HEPATITIS C TREATMENT-NAIVE COAGULOPATHIC PATIENTS

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Introduction. Hepatitis C virus (HCV) infection affects 70 million people worldwide and is one of the leading causes of chronic liver disease. Currently, the treatment for HCV is done by using direct antiviral agents (DAA) and some of these drugs act as inhibitors of HCV NS5A protein. However, limited data is available about resistance-associated sequences (RAS) in coagulopathy patients infected by HCV. **Objectives.** This study aims to evaluate the prevalence of mutations in NS5A region of HCV infected patients with hereditary coagulopathy. **Material and methods.** A total of 15 HCV chronic cases presenting hereditary coagulopathy were recruited from August 2012 to March 2015 in Northeast region of Brazil. HCV RNA was extracted using commercial extraction assay and qualitative RT-PCR for amplification of NS5A region. Positive samples were submitted to Sanger nucleotide sequencing and sequences were analysed using MEGA® 7.0 software and Geno2pheno (HCV) v0.92 (Saarbrücken, Germany) to identify baseline resistance mutations. **Results.** All patients were male with mean age of 35.2 years and 78% reported previous blood transfusion. It was possible to amplify and sequence HCV from six patients, all of which had genotype 1 (5 classified as subtype 1a and one classified as subtype 1b). Baseline NS5A RAS was observed in two patients (33.3%) where one presented L31M and the other had P32A.**Conclusion.** High prevalence of RAS was observed among coagulopathy patients infected by HCV that were naïve to treatment. This information could be important to monitor and to establish policies for treatment in this group.

P-117
RETROSPECTIVE STUDY ON EFFECTIVENESS AND SAFETY OF THE USE OF OMBITASVIR / PARITAPREVIR/RITONAVIR, WITH OR WITHOUT DASABUVIR, WITH OR WITHOUT RIBAVIRIN IN PATIENTS WITH CHRONIC HEPATITIS C GENOTYPE 1 AND 4. RESULTS OF A TERTIARY HOSPITAL

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Background. New direct-acting antivirals have dramatically increased the cure rate across HCV-infected patient with marked improvement in safety and tolerability. **Aim.** To describe the characteristics of the population treated between 12 / 2015 and 12 / 2017 with the regimen 3D ± Ribavirin and 2D plus Ribavirin in G1 and G4 respectively, as well as to evaluate the effectiveness and safety of these drugs. **Material and methods.** Our cohort included patients with hepatitis C virus infection genotype 1 and 4, naïve and pre-treated (non-responders to PR) who received Ombitasvir / Paritaprevir / Ritonavir with/without Dasabuvir ± RBV for 12 or 24 weeks. We analyze the sustained viral response in week 12 (SVR12) as well as tolerability and adverse effects of therapy. **Results.** We treated 379 patients, 59% men with an average age of 58.5 years. They were infected with HCV genotype 1b (55.9%), genotype 1a (25.3%) and genotype 4 (18.7%), with an average basal viral load of 6.18 log. Distribution by the stage of fibrosis was: F4 (67.5%), F3 (19.6%), F2 (4.3%) and F0-1 (8.6%) 10% had platelet count < 90,000/mm^3 and 23.3% were IFN-based treatment experienced patients. 373 patients achieved RVS12 (98.4%) (Figure 1). Discontinuation of treatment occurred in 3 patients; one due to grade 3 anemia, one due to toxicoderma and one on his own initiative. Hyperbilirubinemia (7.2%) and anemia (6%) were the most frequent grade 2 adverse effects (all on Ribavirin treatment). **Conclusions.** 1- Treatment with Ombitasvir / Paritaprevir / Ritonavir and Dasabuvir plus Ribavirin is very effective, achieving high SVR rates in our group, regardless of cirrhotic status, pretreatment and genotype, even higher than those obtained in clinical trials. 2- Treatment was well tolerated and safe; most adverse effects were mild. 3- The incidence of serious adverse effects is exceptionally low.

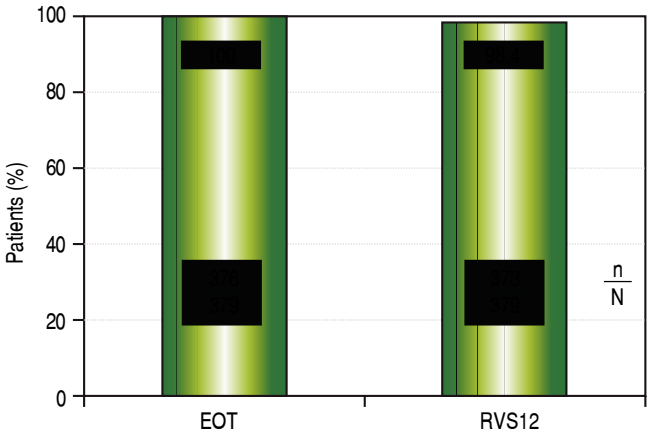

Figure 1 (P-117). *Virological response.*

P-120
HIGH HBV VIRAL LOAD, HBV GENOTYPES AND LIVER STIFFNESS IN MEXICAN HIV PATIENTS

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Introduction. HBV genotypes H and F are endemic among the native and admixed populations of Latin America. However, the frequency of HBV genotypes and clinical outcome is unknown in Mexican HIV/HBV patients. **Objective.** To identify HBV genotypes and assess liver damage in HIV patients. **Material and methods.** In a cross-sectional study, 228 HIV-infected patients were tested for HBsAg, and total anti-HBc (Bio-Rad, Poincaré, MC, France). Viral load (VL) was measured by a reverse-transcriptase PCR system (COBAS® AmpliPrep/CO-

BAS® TaqMan®HBV Test, v2.0.). Multiplex PCR assays and direct DNA sequencing were used to determine HBV genotypes. Liver stiffness was assessed by transitional elastography (Fibroscan™). Liver damage was graded mild (≤ 7.1 Kilopascals, KPa) or advanced (≥ 7.1Kpa). Descriptive and analytical statistical analyses were performed (SPSS, V21.0, IBM™). **Results.** VIH/HBV co-infection was 29.3% (67 HBsAg positive/228). VL was detectable in 70.1% (47/67) in which 66.0% (31/47) had a VL < 2,000 IU/mL and 34.0% (16/47) had ≥ 2,000 IU/mL. Among 25 patients, 44 HBV strains detected were distributed in the following genotypes: H, 50%; G, 23%; D4, 16%; A2, 9% and F1b, 2%. In regards to genotype mixtures, 43% were single genotype (H, n = 10; G n = 1); 37% (n = 9) were dual-mixed infection (H / G > H / D4 > H / A2 > A2 / G) and 20% (n = 5) were triple-mixed infection (H / G / D4 > G / D4 / A2 > H / D4 / F1b). Median VL was higher in patients with triple-mixed infection in compared to single genotype (log 4.5 *vs.* log 4.4, p = 0.234). Among 19 cases, advanced liver damage was related to triple-mixed infection compared to single genotype H cases (29.0 ± 19.5 KPa *vs.* 6.5 ± 3.9 KPa, p = 0.017). However, one case of HBV genotype G had advanced liver damage (18.40 KPa). **Conclusion.** A high prevalence of HBsAg-positive patients was detected. High viral load was related to mixed HBV genotype infection and advanced liver damage. However, one single genotype HBV/G case had advanced liver damage. HBV genotype G was found in dual and triple infections. **Conflict of interest.** No conflict of interest to declare.

P-128
HEPATITIS A OUTBREAK IN CHILE: CLINICAL, EPIDEMIOLOGICAL, MOLECULAR ANALYSIS, AND PHYLOGENETIC COMPARISON WITH CHILEAN ENDEMIC STRAINS

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Introduction. An outbreak of hepatitis A (HAV) has occurred in Chile in 2017, with an increase of the incidence rate of 15 times, predominantly affecting men, beintg the majority men who have sex with men (MSM). **Objectives:** To perform a clinical, epidemiological and molecular characterization of the outbreak of hepatitis A in Chile in 2017, to compare it with the circulating endemic strains previously reported in Chile and with outbreaks reported in Europe in 2017. **Material and methods.** Patients older than 18 years old with clinical and biochemical diagnosis of VHA were surveyed with a clinical epidemiological form, which included sexual risk factors. We extracted 20 mL of blood for viral RNA detection, amplification of the VP1 / P2A region of the HAV genome (HAVNET protocol) and phylogenetic analysis. **Results.** We report 12 patients with hepatitis A, 9 / 12 were men, 8 reported MSM, five patients had HIV coinfection, 2 of them had syphillis too, and one patient had chronic hepatitis B. The clinic presentation was the classic of the acute hepatitis. One-third required hospitalization and 16.6% presented severe hepatitis, none of them presented encephalopaty. Viral RNA was found in 10/12 patients, all of them belong to the IA genotype, the sequences obtained were deposited in HAVNET. Two phylogenetic trees were made (Figure 1). The sequences obtained are grouped in the cluster V16-25801, similar to that reported in Germany in January 2017 and show an important phylogenetic distance of the endemic Chilean strains. **Conclusion.** The great outbreak of hepatitis A infection in Chile is closely related to the 2016-17 outbreak of 19 European countries, all of them were genotype 1A. The strains of the 10 patients analyzed from this outbreak are clinical and phylogenetically similar to the outbreak in Chile 2017 and different phylogenetically to the endemic strains previously analyzed in Chile in 1999.

P-134
EXPERIENCE ON THE MANAGEMENT OF HEPATITIS C VIRUS WITH NEW ANTIVIRALS IN CHILE

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Introduction. The direct acting antiviral drugs (DAA) for the treatment of chronic hepatitis C virus (HCV) infection have dramatically changed the natural history of the disease, achieving complete eradication of the virus, with sustained virologic response rates (SVR) of over 95%. **Objective.** To describe the use of DAA in the management of patients with HCV in Chile, with response rates, adverse effects, and clinical characterization of this population. **Material and methods.** An observational retrospective study, including patients with HCV infection, confirmed by a viral load test (VLT), between January 2014 and May 2018. Patients without VLT and with incomplete clinical records were excluded. **Results.** 141 patients were included in the analysis; 54% were men with a median age of 59 years-old (range from 28 to 84); 56% had cirrhosis at the beginning of treatment; 6% had hepatocellular carcinoma; 5% had liver transplantation; 4% HIV co-infection; 4% known cryoglobulinemia. Genotype 1b was present in 76%, 3 in 11% and 1a in 9%. Regarding to DAA combination, 47% employed sofosbuvir and daclatasvir (45% associated with ribavirin), 21% sofosbuvir and ledipasvir (41% associated with ribavirin), 19% dasabuvir, ombitasvir, ritonavir and paritaprevir (70% associated with ribavirin) and 13% used other combinations. In 75% of the cases, treatment was conducted for 12 weeks and 23% for 24 weeks. By the time this abstract was sent, 84% of patients had completed treatment with 99% of SVR 12 weeks after treatment (SVR12). In cirrhotic patients, SVR12 was 98%. At least one side effect was present in 55% of patients, all of them being mild (asthenia, tiredness, nausea and diarrhea). **Conclusion.** In this study group there was a 99% of HCV eradication, using the different therapeutic schemes of DAA. This correlates with most international publications and supports the need to guarantee access to this drug in our community.

P-136
PREVALENCE OF OCCULT HEPATITIS B VIRUS INFECTION IN CHRONIC KIDNEY DISEASE PATIENTS IN BRAZIL

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Introduction. Hepatitis B virus (HBV) infection is a global health problem that represents a significant co-morbidity event particularly among chronic renal disease (CKD) patients. There are few data concerning occult HBV infection among Brazilian chronic hemodialysis patients. **Objective.** This study was aimed to evaluate the prevalence of occult HBV infection in CKD patients receiving hemodialysis (HD) in two geographical areas from Brazil (Northeast and Southeast region). **Material and methods.** A cross sectional study was done on 286 CKD patients undergoing regular HD. Blood samples were collected prior to the HD session and HBsAg, anti-HBs and anti-HBc were measured using commercially available enzyme immunoassays kit. Anti-HBc positive and negative anti-HBs samples were tested for HBV DNA using in house qualitative polymerase chain reaction technique for surface/polymerase gene amplification. Data were analyzed by SPSS using t-test and χ^2 test. **Results.** The mean age of patients was 51.3 ± 13.8 years and most of them was males (183 / 286), married (51%), aged over 41 years (76%), had more than 8 years of education (48.9%) and received monthly family income of 80 to 310 dollars (58.9%). Most individuals reported previous blood transfusion (206 / 286), 28 subjects reported kidney transplantation, and median dialysis time was 48 months. HBsAg was detected in 13 subjects, 82 were anti-HBc / anti-HBs, 116 were anti-HBs reactive and 17 had only anti-HBc detected in serum. HBV DNA was detected in 2 out of 17 anti-HBc reactive samples showing 12.5% of prevalence of occult infection. All of them had history of blood transfusion, sexually transmitted infection and no transplantation. **Conclusion.** The prevalence of occult HBV infection in CKD patients undergoing HD was high in this study demonstrating that occult HBV infection is a significant health problem in HD patients in this region.

P-137
EXPERIENCE OF COMBINED IMMUNOGLOBULIN ANTI HEPATITIS B AND NUCLEOTIDE ANALOGUE AGAINST HEPATITIS B RECURRENCE AFTER LVIER TRANSPLANTATION

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Introduction. Before the use of Hepatitis B immunoglobulin, the rate of hepatitis B recurrence of after transplant was high up to 80%. With current antiviral therapy and the use of immunoglobulin the risk of recurrence is less than 5%, however the optimal duration of immunoglobulin has not been defined. **Objectives.** Describing the virological response of liver transplantion patients secondary to hepatitis B, using a combined scheme of immunoglobulin plus nucleotide analogue (Entecavir) for 2 years. **Material and methods.** Retrospective descriptive study of hepatitis B virus- related liver transplantation recipients receiving combined prophylaxis with hepatitis B immunoglobulin for 2 years and nucleos(t)ide analogue during the period between 2014 to 2018 in a hospital in Bogotá - Colombia. **Results.** 209 adult transplanted patients were analysed between January 2014 to January 2018. Seven chronic hepatitis B patients were identified. A median of the follow-up period was 23 months, the patients' average age was 41 years, median Model for End-Stage Liver Diseases score was 23 points. None of the patients had hepatocarcinoma. One patient (14%) had coinfection with hepatitis C virus and another patient (14%) with delta virus. Hepatitis B surface antigen seroclearance at the first month of transplantation was 100% in all the patients, and the cumulative rate of hepatitis B antigen seroclearance at 1-year follow up was 100%. 5 of the 7 patients had more than 1 year of follow-up. From them, there was 1 patient (20%) with hepatitis B virus reactivation requiring a change to tenofovir with an adequate response. Post-liver transplantation survival was 100% at 2 years. **Conclusions.** The use of combination therapy with nucleotide analogue with immunoglobulin for more than 1 year, increases the survival of liver transplantation secondary to chronic hepatitis B with a low reactivation incidence.

P-140
VIRAL HEPATITIS KNOWLEDGE AMONG INDIVIDUALS FROM DIFFERENT RESOURCE AREAS AND HEALTH CONDITIONS

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Introduction. Viral hepatitis was responsible for more than 1 million of deaths in 2015 and most of them were due to chronic liver disease and primary liver cancer. Knowledge about prevention, transmission and other aspects of these diseases is an important measure to achieve the elimination of these viruses. **Objective.** The main objective of this study is to evaluate viral hepatitis knowledge among individuals from different resource areas and health conditions to identify possible gaps. **Material and methods.** A cross-sectional study was carried out among 447 individuals from 5 distinct populations in Brazil. Southeast viral hepatitis ambulatory (n = 100), South (n = 89) and Northeast (n = 114) Health Center, Southeast (n = 77)

and Northeast (n = 67) low resource areas. All individuals answered a questionnaire assessing socio-demographic characteristics and viral hepatitis awareness. The perception was scored based on the average number of correct answers of all participants and categorized as "Low" (0-28 correct answers) or "Desirable" (29-46 correct answers). Associations between socio-demographic characteristics and perception were also evaluated. **Results.** Average of correct answers was 28.7 ± 6.1 and Southeast Viral Hepatitis Ambulatory and South Health Center demonstrated a desirable knowledge (30.5 ± 5.0 and 29.5 ± 5.6, respectively). According to socio demographic characteristics, desirable scores were more common among those with secondary education (47.1%), those who declared themselves as white (46.3%), and those who lived in houses with three individuals (25.5%). Multivariate analysis showed that low viral hepatitis perception was more common among those were illiterate [Odds Ratio (OR). 2.23] and lived at Northeast low resource areas (OR. 11.26). **Conclusions.** A high level of knowledge was found among study participants from health clinics from the Southeast region of Brazil and it is important to increase education programs in low resource areas.

P-143
HIGH PREVALENCE OF SUSCEPTIBILITY TO HEPATITIS B IN ELDERLY INDIVIDUALS FROM A BRAZILIAN REGIONAL METROPOLIS

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Introduction. Hepatitis B is an immunopreventable disease but is still a serious public health problem because cultural habits may affect the epidemiology of this infection. The absence of serological contact and vaccination markers characterize the susceptibility status. In Brazil, only in 2015 the vaccine was made available to individuals over 50 years old. **Objective.** To estimate the frequency of the susceptibility status to hepatitis B in a population born between 1945/1985 and served by the public health service. **Material and methods.** Cross-sectional study with 650 patients from one UFBA laboratory selected by lots. A questionnaire containing items about habits and health data was applied. Serological tests for HBsAg / Anti-HBcTotal / Anti-HBs were performed by chemiluminescence. Subjects with positive results for the first two markers were referred for medical care and those with all negative results received a recommendation to seek a vaccination station. **Results.** The susceptibility status was found in 68% of subjects, most of them women (71.5%) and participants aged 51-70 (57.7%). Low instruction level (43%) and family income (46.8%) were reported by the majority individuals. The risk factors most reported were unsafe sex (96.6%), dental procedures (93.7%), previous surgeries (73.1%), glass syringes sharing (49.7%), injectable vitamin complexes use (18.6%), and less than 10% tattooing / piercing, illicit drugs use and blood transfusion. The high prevalence of susceptibility in females was probably due to the high frequency of women in the study. The availability of the vaccine in the public network to elderly individuals and the high cost may have hindered it's acquisition and resulted in a high susceptibility status. Also incomplete vaccination schedule or non-vaccine responders should be considered. Low viral circulation probably occurs even with unprotected sexual practices referred. Quality and biosafety criteria were observed during medical procedures to which the population was submitted. **Conclusions.** The practice of unsafe sex is common despite the campaigns to increase condom use. In individuals over 50 years of age a high susceptibility to hepatitis B it was observed. This population segment needs more attention from health services. **Support.** Laboratório de Imunologia e Biologia Molecular (ICS-UFBA), Serviço de Gastro Hepatologia do Ambulatório Magalhães Neto (AMN-HUPES), FAPESB, CNPq, PIBIC-UFBA, FAPEX.

P-144
SEROPREVALENCE OF ANTI-HAV AND ANTI-HEV IGG IN INDIVIDUALS BORN BETWEEN 1945 AND 1985 ATTENDED AT A LABORATORY OF THE PUBLIC HEALTH SYSTEM IN SALVADOR - BRAZIL

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Introduction. Hepatitis A (HAV) and E (HEV) viruses are transmitted via fecal-oral route by ingestion of contaminated food and water, being associated with poor basic sanitation and contact with swine-raising or byproducts **Objectives.** 1. Evaluate the sorreactivity for IgG anti-HAV and anti-HEV. 2. Associate these findings with sociodemographic parameters. **Material and methods.** Descriptive, cross-sectional, randomized study with 500 individuals born between 1945 and 1985, residing in the state of Bahia using a sociodemographic questionnaire and performing serological tests (ELISA) for Ig G anti-HAV and anti-HEV. **Results.** 453 (90.6%) presented anti-HAV IgG antibodies, 10 (2.0%) presented both anti-HAV IgG and Anti-HEV IgG, 10 (2.0%) and 2 (0.4%) presented only Anti-HEV IgG. Regarding the other risk factors assessed in the interview, all individuals with reactive serology for HEV reported consuming swine and / or game meat and denied ingestion of raw shellfish. **Conclusions.** The study population presented high

prevalence of HAV seroreactivity and low prevalence of HEV seroreactivity, in agreement with previous studies. Although the participants reported access to basic sanitation, contact with HAV virus occurred, probably due to the age group studied (30 / 70), before improvement of basic sanitation, and of the 12 patients with anti-HVE positive IgG, all six individuals who returned to the laboratory, after serology results, reported direct contact with swine at some point, suggesting a zoonotic infection.

P-145
HEPATITIS C. HIGH PREVALENCE IN BABY BOOMER GENERATION IN A LABORATORY OF ANALYSIS CLINICAL

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Introduction. The hepatitis C is a disease that is usually characterized by silent infection associated with chronic complication. Recently there is a treatment that gives an excellent response and the challenge now is find out this patient. **Material and methods.** Cross section in random sampling composed of 650 participants that were born between 1945 and 1985 who agreed to participate. A brief explanation of the disease was made, the questionnaires were applied and the blood samples collected. Initially the samples were tested by immunochromatography (ICG) and those with positive results were tested by chemiluminescence (QL). Those who presented both positive tests were referred to specialist. **Results.** Regarding participants, 3.7% out of the total presented reaction in both tests. Among those that presented reaction, 56.8% were of the baby boomer generation, 5.2% had HCV reagent and non-baby boomer (43.2%) and 1.8% had a positive result. Statistically significant life habits. blood transfusion prior to 1993 (4.3%) ($p = 0.014$), tattooing or piercing (10.3%) ($p = 0.007$), previous use of glass syringe 45.9% ($p = 0.003$), use of injectable life-time complex ($p = 0.003$), use of illicit drugs ($p = 0.00$) and use of injecting drugs ($p = 0.00$). Participants who presented positive results came to the laboratory through specialty medical clinic, gynecology, and admission exams, but no specialty showed a higher prevalence. **Conclusion.** The prevalence of HCV infection was higher than prior recorded. HCV infection was more prevalent in the "baby boomer" generation and may be related to high frequency of illicit drug use referred. There was no medical specialty to be considered of higher prevalence, although it was not the suitable type of study for this information.

P-146
IMPACT OF DIRECT ACTING ANTIVIRAL THERAPY FOR TREATMENT OF HEPATITIS C CHRONIC INFECTION IN ADVANCED LIVER DISEASE OR LIVER TRANSPLANT PATIENTS. A REAL EXPERIENCE FROM URUGUAY

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Introduction. Direct acting antiviral (DAA) therapies have become the standard of care for treatment of hepatitis C virus (HCV) chronic infection due to their high efficacy and safety. **Objective.** To assess the impact of DAA therapies for treatment of HCV chronic infection in advanced liver disease or liver transplant (LT) patients from Uruguay. **Material and methods.** Thirty patients treated with sofosbuvir and daclatasvir (genotypes 1 and 3) or sofosbuvir and ledipasvir (genotypes 1) with or without ribavirin for 12-24 weeks between march 2016 and march 2018 were included. The primary endpoint was sustained virological response at post-treatment week 12 (SVR12) (modified intention-to-treat) and the secondary endpoint was the occurrence of adverse events (by spontaneous report). Predictors of treatment response were analyzed. The third endpoint was delisting in the subgroup of patients awaiting LT. Predictors of delisting were analyzed. Statistical significances were analyzed using unpaired t-test for quantitative variables and likelihood-ratio χ^2 for qualitative variables. **Results.** 90% of the patients achieved SVR12; 92% in the LT and 88% in the advanced liver disease patients. Albumin < 3.5 mg/dL and platelet count < 100,000 were predictors of treatment non-response (p 0.0167). 43.3% of patients experienced mild adverse events, only one patient discontinued therapy due to major adverse event. 56% were inactivated due to clinically improvement and 33% subsequently delisted after a mean period of 40 weeks after the end of treatment. Baseline MELD score < 15 was predictor factor of delisting ($p = 0.0297$). **Conclusion.** DAA therapy achieved high SVR rates with a relatively safe profile, and allowed removal from the waiting list of one third of treated patients. Patients with a MELD score ≥ 15 and predictors of treatment non-response, could be considered to be treated in the post-LT setting.

P-147
HEPATITIS E VIRUS (HEV) INFECTION IN PATIENTS WITH CIRRHOSIS AND IN LIVER TRANSPLANT RECIPIENTS IN BUENOS AIRES, ARGENTINA. EXPLORING ASSOCIATED RISK FACTORS

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Background. HEV infection has been associated with self-limiting acute hepatitis, but progression to chronic hepatitis has been recently reported among immunosuppressed populations. Cirrhosis and liver transplantation have also been postulated as predisposing factors for HEV infection. **Aim.** To estimate the prevalence of HEV infection and associated factors in patients with cirrhosis and in liver transplant recipients in Buenos Aires, Argentina. **Material and methods.** Serum samples were obtained from consecutive patients with cirrhosis and liver transplant recipients between June 2017 and April 2018. Detection of anti-HEV IgG and IgM antibodies, and HEV RNA were carried out by ELISA (Dia.Pro, Italy) and ORF-2 PCR, respectively. Bivariate statistics were used to identify factors associated with positive anti-HEV IgG antibodies. **Results.** Sixty-one patients were included. 41 (67.2%) patients with cirrhosis and 20 (32.8%) liver transplant recipients. The main demographic, clinical and serological characteristics are shown in the table 1. Nine liver transplant recipients (45 %; 95%CI 23% - 68%) were anti-HEV IgG[+], 8 of whom were also anti-HEV IgM[+]. Twelve patient with cirrhosis (29.2%; 95%CI 16%-46%) were anti-HEV IgG[+], 9 of whom were also anti-HEV IgM[+]. The presence of anti-HEV was documented in 54.5% of patients with alcoholic cirrhosis *vs.* 20% of those without alcoholic cirrhosis (P = 0.03; odds ratio 4.8; 95% CI 1.1-21.2). HEV RNA was detected in 28.6% of seropositive transplant recipients and in 16.7% of seropositive patients with cirrhosis (Table 1). **Conclusions.** Higher HEV seroprevalence was detected in patients with cirrhosis and in liver transplant recipients when compared to the same populations from European countries, and to immunocompetent and immunosuppressed populations from Argentina. Further research is needed to ascertain whether alcoholic cirrhosis can be a potential risk factor for HEV infection. Conflict of interest. None.

P-154
CHANGE IN INFLAMMATORY CYTOKINE LEVELS AFTER DIRECT-ACTING ANTIVIRAL THERAPY IN CHRONIC HEPATITIS C VIRUS INFECTION

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Introduction. Hepatitis C virus (HCV) liver damage is mediated by the immune response. Studies report reduction in the pro-inflammatory state after HCV eradication. **Objective.** To evaluate the change in inflammatory cytokine levels before and after direct-acting antiviral (DAA) therapy. **Material and methods.** Patients older than 18 years with HCV infection who received DAA therapy were included. Cytokine levels of

Table 1 (P-147). Comparison of characteristics of patients with positive and negative anti-HEV IgG antibodies.

	All	Anti-HEV IgG+ (n = 21)	Anti-HEV IgG- (n = 40)	P value
Age (mean [range])	58.2 [22-87]	58.2 [40-87]	58.5 [22-85]	0.93
Gender [n, male (%)]	35 (57.4%)	10 (47.6%)	25 (62.5%)	0.27
AST (IU/L) (mean [range])	51.2 [7-267]	51 [15-267]	51.6 [7-180]	0.96
ALT (IU/L) (mean [range])	47.1 [7-439]	46.2 [11-111]	47.2 [7-439]	0.95
Bilirubin (mg/dL) (mean [range])	1.8 [0.4-15.3]	1.8 [0.4-5.9]	1.8 [0.4-15.3]	1
Patient category				
Liver transplant recipients	20 (32.8%)	9 (42.9%)	11 (27.5%)	0.23
Cirrhosis	41 (67.2%)	12 (57.1%)	29 (72.5%)	
Cause of cirrhosis[a]				
Viral cirrhosis	12 (29.3%)	3 (25%)	9 (31%)	
Alcoholic cirrhosis	11 (26.8%)	6 (50%)	5 (17.25%)	
Primary biliary cirrhosis	5 (12.2%)	1 (8.3%)	4 (13.8%)	0.37
NASH	7 (17.1%)	2 (16.7%)	5 (17.25%)	
Other causes	6 (14.6%)	0 (0%)	6 (20.7%)	
Alcoholic cirrhosis[a]	11 (26.8%)	6 (54.5%)	5 (45.4%)	**0.03**

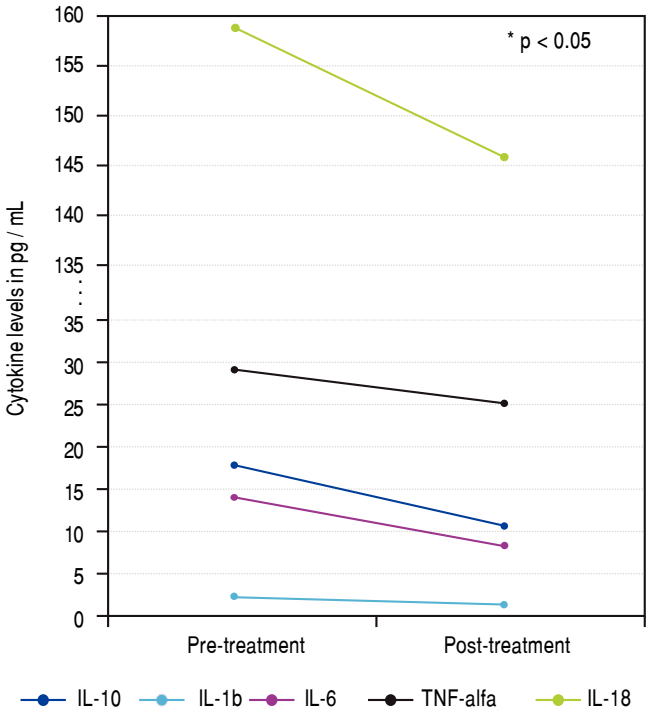

Figure 1 (P-154). *Cytokine reduction after DAA therapy.*

interleukin (IL)-10, IL-1β, IL-6, IL-18, tumor necrosis factor (TNF)-α, leptin and adiponectin were determined. **Results.** Thirty-four patients were included, with mean age of 59.5 (32 - 80) yr, 21 were women. The more frequent DAA scheme was sofosbuvir / ledipasvir (n = 19), more frequent genotype Ia (n = 17), significant fibrosis [F ≥ 3] in 29 patients and the majority were treatment-naïve (n = 24). SVR12 was confirmed in 33 patients (97%). There was a significant reduction of cytokine levels of. IL-10 (18.2 [3.9 - 78.8] to 10.8 [2.4 - 42.0] pg/mL), IL-1β (2.3 [0.22 – 24.0] to 1.4 [0.11 – 10.1] pg/mL), TNF-α (29.3 [14.1 – 64.8] to 25.3 [1.27 – 58.4] pg/mL) and IL-18 (159.35 [97.8 - 337] to 146.6 [101.8 – 372.1] pg/mL) (Figure 1). A non-significant increase in levels of leptin (18.9 [0.04 - 79] to 33.4 [0.04 - 331.2] ng/mL) and adiponectin (57.0 [1.8 - 971.8] to 205.2 [0.27 - 2804.9] mcg/mL) was found. Basal cytokine levels were similar between significant fibrosis (SF) and non-significant fibrosis (NSF). However, there was a mayor reduction in IL-10 (19.0 [3.9 – 78.8] to 11.1 [2.6 – 42] pg/mL, p < 0.001), TNF-α (30.2 [14.1 – 64.8] to 26.3 [1.27 – 58.4] pg/mL, p < 0.001) and IL-18 (164.8 [97.8 – 337] to 149 [101.8 – 372.1] pg/mL, p = 0.01) levels in patients with SF and only of TNF-α (23.4 [18.8 – 29.9] to 19.9 [15.3 – 23.5] pg/mL, p = 0.04) in NSF patients. **Conclusions.** A reduction in cytokine levels of IL-10, IL-1β, TNF-α and IL-18 after DAA therapy was found, more evident in the SF group. More studies are needed to establish if these findings will affect the course of the disease. **Conflict of interest.** The authors declare there is no conflict of interest.

P-156
KNOWLEDGE ABOUT HEPATITIS B IN STAFF OF A THIRD LEVEL COMMUNITY HOSPITAL IN ARGENTINA

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Background. Hepatitis B virus (HBV) infection causes acute and chronic liver disease. It is important to determine what is the current knowledge of this disease and preventive practices by health personnel to establish effective HBV prevention programs. **Aim.** Determine knowledge about HBV routes of transmission and prevention in a third level hospital staff and evaluate relationship with educational level and profession. **Material and methods.** A voluntary anonymous survey was conducted in May and June 2018 to the staff of Hospital José María Cullen in Santa Fe city. Staff from different administrative, medical and maintenance sectors were included. The data was collected in electronic spreadsheet and analyzed using IBM-SPSS v.23 software. The variables were analyzed through Chi-square (χ^2) test. The level of significance was 95%. **Results.** 253 employees were surveyed. 67.5% declared tertiary and university academic level. Only 17% of the respondents were over 50 years old, with the remainder between 18 and 49 years of age. 90% knew HBV disease. 94.5% of physicians and 79% of all surveyed received HBV vaccine. HBV vaccination frequency was significantly higher in physicians and universitary academic formation respondents (p = 0.001) (Table 1). 54% of the total knew that HBV vaccination requires 3 doses, being universitary respondents who knew better the vaccination scheme (p = 0.001). Only 33% knew that antibody titre should be measured to evaluate vaccine response. Despite a high number of vaccinated respondents, 52% answered that they do not know that vaccination prevents HBV infection. Although 94% knew that HBV is transmitted through unprotected sex and that the use of condoms prevents it, only 7 respondents answered adequately about HBV possible routes of transmission. **Conclusion.** Different vaccination and HBV knowledge was observed according to profession and academic education of the respondent. Education about HBV should be improved in this high risk population.

Table 1 (P-156). HBV vaccine frequency by academic education.

	Academic education		Total
	Non-universitary	Universitary	
HBV vaccine			
No	46	10	56
Yes	90	127	217
Total	136	137	273

The χ^2 test determined a value p = 0.001, being significant.

Table 1 (P-160).

Biochemical markers	Coinfected	Monoinfected
ALT	69.8 ± 32.3 UI/L	55.7 ± 22.4 UI/L
AST	60.8 ± 25.6 UI/L	57.2 ± 32.2 UI/L
GGT	133.6 ± 50.2 UI/L	112.3 ± 27.3 UI/L
FA	101 ± 37.5 mg/dL	114 ± 30.2 mg/dL
INR	1.23 ± 0.2	1.32 ± 0.2
Albumin	3 ± 0. 3 g/dL	3.4 ± 0.4 g/dL
Total bilirubin	0.83 ± 0.3 mg/dL	0.95 ± 0.2 mg/dL
Serological markers	VIH / VHB	VHB
AgHBe	90.8%	58.8%
Anti-HBe	9.2%	41.2%
Average viral load	7792 UI/mL	1433 UI/mL

P-160
BIOCHEMICAL AND SEROLOGICAL BEHAVIOR OF HBV. COMPARISON BETWEEN COINFECTED (HBV / HIV) AND MONOINFECTED PATIENTS (VHB)

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Introduction. The coinfection between HBV and the human immunodeficiency virus (HIV) is a frequent finding due to the sharing of transmission ways. Patients coinfected with HIV and HBV are less likely to eliminate HBV. HBV infection will cause chronification in 2-5% of immunocompetent adults, while patients infected with HIV can become chronic in 15-23%. **Objectives.** To evaluate the biochemical and serological behavior of HBV between coinfected patients (HBV / HIV) and monoinfected patients (HBV). **Material and methods.** The present is a non-experimental, cross-sectional, descriptive study. We retrospectively reviewed 1830 patients with HIV who were attended at hospital "Dr. Teodoro Maldonado Carbo", between 2012 and 2017. At the same time, the medical records of 80 patients with chronic HBV infection were reviewed. The epidemiological, biochemical and serological characteristics were compared in both groups. For the serological determination of HBV and HIV were used. VHB, Murex HBsAg Confirmatory Version 3; HIV Murex HIV-1.2. O Enzyme immunoassay (HIV-1, group O HIV-1) and 2 (HIV-2). **Results.** In HBsAg patients, HBsAg was found in 65 individuals (3.5%). The middle age was 53.1 ± 13.6 years in coinfected patients and 55 ± 13.5 years in the mono-infected. The male population was the most prevalent in both groups (HBV / HIV 85%, HBV 80%), the serological and biochemical markers were the following. **Conclusions.** Our prevalence (3.5%) of HBV in patients with HIV is similar to the prevalence reported in the non-HIV population in Ecuador. The coinfected have lower rates of seroconversion to Anti-HBe and higher viral load levels. Discretely higher AST / ALT values in coinfected patients. The values of albumin are very similar.

P-162
ACUTE CYTOMEGALOVIRUS HEPATITIS IN A YOUNG IMMUNOCOMPETENT PATIENT

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Introduction. Cytomegalovirus (CMV) has a high seroprevalence in adults; 50% in the US and 96% in Brazil. Primary infection in an immunocompetent host is usually asymptomatic or clinically similar to mononucleosis, usually of benign and self-limiting resolution. In newborns and immunosuppressed individuals it can be life threatening. CMV Infrequently can cause gastrointestinal disease in immunocompetent hosts, the most common manifestations are esophagitis and colitis, sporadic hepatitis and cholestatic jaundice. **Objective.** To describe an atypical presentation of acute cytomegalovirus hepatitis in a young immunocompetent patient. **Case report.** Female patient of 25 years of age, without personal pathological antecedents, has a clinical presentation of 1 month of evolution characterized only by jaundice and generalized intense pruritus.

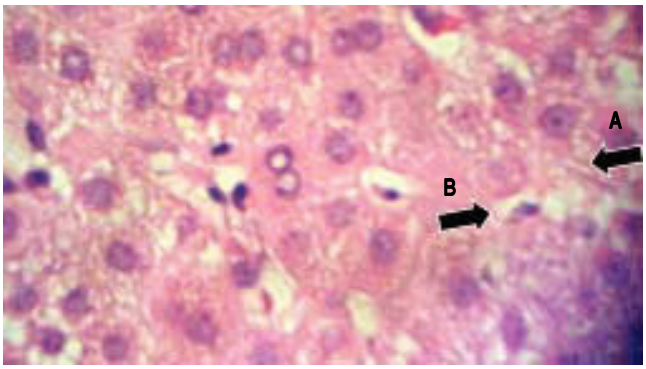

Figure 1 (P-162). A. *Intranuclear citomegal inclusions.* ***B.*** *Lymphocytes in sinusoids.*

Analytically. Important hyperbilirubinemia at the expense of direct fraction and slight increase in transaminases. Hepatotropic viruses and autoimmune hepatitis were ruled out. The diagnosis was made by the presence of IgG antibodies for cytomegalovirus, with viral load by PCR of 2,315 copies per milliliter of peripheral blood. Liver biopsy showed cytomegalic inclusions in hepatic parenchyma. During its evolution, hyperbilirubinemia increased drastically, total bilirubin 42.36 mg/dL, marked jaundice, uncontrollable generalized pruritus. Due to the severity of the symptoms, treatment was started with Valganciclovir for 15 days, with immediate response, total resolution of symptoms and undetectable viral load (Figure 1). **Conclusions.** 1. Cytomegalovirus is an infrequent, underdiagnosed, unknown pathogen of hepatitis, it is necessary to consider it in the differential diagnosis in immunocompetent patients. 2. Its identification is of great scientific, epidemiological and mainly clinical importance to avoid fulminant hepatic deterioration. 3. The treatment is controversial in immunocompetent patients. 4. Valganciclovir seems to be effective in cytomegalovirus hepatitis, however performing multicenter randomized studies with a larger population is necessary.

P-164
HIGH EFFICACY AND SAFETY OF INTERFERON-FREE HEPATITIS C TREATMENT IN A LARGE COHORT OF BRAZILIAN PATIENTS

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Introduction. Hepatitis C virus (HCV) is a major cause of chronic and end stage liver disease worldwide. In recent years, significant advances in HCV treatment have been accomplished regarding efficacy and safety, due to the use of direct acting antiviral agents (DAAs). However, advanced cirrhosis and certain genotypes can still be a challenge to its success. **Objectives.** To evaluate the efficacy and safety of HVC treatment with DAAs (sofosbuvir plus simeprevir or daclatasvir ± ribavirin) in a Brazilian real life cohort of HCV patients. **Material and methods.** Multicentric observational study conducted at the outpatient clinics of the Division of Clinical Gastroenterology and Hepatology of the University of São Paulo (FMUSP) and the Division of Gastroenterology (Gastrocentro) of the University of Campinas (UNICAMP), Brazil, in HCV patients submitted to DAA therapy according to national protocols, from November 2015 to May 2018. Sustained virologic response (SVR) 12 weeks post treatment was evaluated. Common Terminology Criteria for Adverse Events (AE) were adopted, and $p < 0.05$ was considered significant. **Results.** We included 409 patients, 51.6% men, 56% (229) were cirrhotic (73.3% CHILD A) and 23.5% had Metavir F3 liver fibrosis. Most patients were HCV genotype (G) 1 (79.9%), followed by G3 (18.1%). Sofosbuvir + daclatasvir ± ribavirin were used in 268 patients (65.8%), and sofosbuvir + simeprevir ± ribavirin in 136 (33.4%). Global SVR was 97.7% (392/401). Among cirrhotic subjects, 96.4% achieved SVR. Stratifying by genotype, SVR was attained in 98.4% and 94.7% for G1 and G3, respectively. AE were reported in 37.9% of subjects. 25.3% fatigue, 9.2% headache and 6.4% pruritus. Anemia was noted in 14.9%, mainly mild. Serious AE occurred in 3.2% of patients. **Conclusion.** High rates of SVR were observed in this real life cohort of HCV patients mainly with compensated liver disease. Most AE were non-serious.

P-165
"REAL-LIFE" EXPERIENCE WITH SOFOSBUVIR-BASED REGIMENS IN BRAZILIANS WITH CHRONIC HEPATITIS C AND CHRONIC KIDNEY DISEASE

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Introduction. Hepatitis C (HCV) treatment with the new direct-acting antivirals (DAAs) presents a high efficacy and excellent safety profile for the majority of patients. Most regimens include Sofosbuvir, a pan-genotypic drug. However, sofosbuvir has a predominantly renal clearance, and its safety in patients with chronic kidney disease (CKD) is not well established. **Objectives.** To evaluate safety and efficacy of hepatitis C treatment in sofosbuvir-based regimens in a Brazilian cohort of chronic kidney disease patients. **Material and methods**. This is a longitudinal, observational study that included HCV patients from two national reference centers - University of São Paulo and the University of Campinas. All the patients were treated with DAAs (sofosbuvir plus simeprevir or daclatasvir ± ribavirin) with no dose correction. Sustained virologic response (SVR) was defined as viral RNA copies < 15 mIU/mL performed 12 weeks upon completion of treatment. **Results.** Seventy-eight patients were included. Established cirrhosis was present in 42.3%, among which 63.6% were previously compensated (Child-Turcotte-Pugh stage A), 33.3% were stage B and 3% stage C. Genotype 1 and 3 were the most prevalent (64% and 12% respectively). Up to 50% of patients had a CrCl < 30 mL/min/1.73 m² in conservative treatment; 17.9% in renal replacement therapy; and 32.1% were renal transplant patients. The regimen of sofosbuvir + daclatasvir ± ribavirin was used in 67%, and sofosbuvir + simeprevir ± ribavirin in 11%. SVR was achieved in 98.7%. Only one patient, among the transplant patients, did not achieve SVR. One patient developed severe hepatic decompensation. Anemia developed in 12% of patients; 6 of them reached levels below 8 mg/dL, and just one required hemotransfusion. Non-serious adverse events occurred in 27%, the most reported was fatigue (25.6%). **Conclusion.** DAAs use in CKD patients seems safe and effective for the treatment of hepatitis C, presenting a low incidence of significant adverse events.

P-166
NEW FINDING OF AUTOCHTHONOUS HEPATITIS A CASES IN MEN WHO HAVE SEX WITH MEN IN BUENOS AIRES, ARGENTINA

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Introduction. Universal single-dose vaccination against hepatitis A virus (HAV) was implemented in Argentina since June 2005 for all infants at 12 months of age, after a nationwide outbreak in 2003 to 2004. As a consequence, a dramatic decline in the rate of HAV was observed not only in children but also in adults, as it was described by our group previously (AASLD 2012). After having dissapeared between 2012 and 2015, we observed new cases since 2017. **Objetive.** To describe the characteristics of these new autochthonous cases of hepatitis A and to analyze the possible causes of its appearance. **Material and methods.** This is a retrospective study where clinical charts were reviewed in our center since March 2013 to May 2018. Only adult patients (> 18 years old) were included. Every patient with acute hepatitis diagnosis was recruited. The annual incidence of hepatitis A is analyzed and the characteristics of HAV cases are described. **Results.** During the study period, 143 patients with acute hepatitis were identified. The main features of the HAV cases were. 13/13 were male, medium age 28 years, 12/13 patients were men who have sex with men (MSM), 2/13 were travelling during the period of incubation of HAV, then, 11/13 were considered as autochthonous cases. Analizing the incidence, we observed that in the period since march 2013 to May 2016 there were no HAV (0/79), since June 2016 to May 2017 there were 2 cases (2/31, 6,4%) and since June 2017 to May 2018 there were 11 cases of HAV (11/33, 33%). **Conclusions.** Universal single-dose vaccination against hepatitis A in infants showed a dramatic decrease in the incidence of acute hepatitis A, however, new cases are being found nowadays, especially in MSM. We think it is important to implement vaccination in this risk group for hepatitis A. More reports in this area are necessary to understand the reasons of these findings.

P-173
EFFICACY AND SAFETY OF DACLATASVIR-SOFOSBUVIR ASSOCIATED TREATMENT. EXPERIENCE IN 240 MONOINFECTED AND COINFECTED PATIENTS IN REAL LIFE IN BUENOS AIRES, ARGENTINA

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Introduction. Worldwide, there are about 70 to 100,000 million hepatitis C (HCV) chronically infected people. In Argentina there has been access to direct action antivirals for HCV since December 2015. Daclatasvir (DCV) and Sofosbuvir (SOF) with or without Ribavirine (RBV) were the most commonly drugs used. **Objective.** To evaluate the sustained virological response (SVR) achieved with the DAC / SOF ± RBV combination. To determine the differences between genotypes (G) and subtypes (ST) of HCV, the presence of cirrhosis, and HIV infection. **Material and methods.** There were included consecutively those patients infected with HCV genotypes 1-4 who started treatment with DCV (60 mg/d) / SOF (400 mg / d) +/- RBV (1-1.2 g/d) for 12 to 24 weeks according to genotypes and level of fibrosis (F). Liver elastography (Fibroscan) was performed to every patient. Cirrhosis was determine with a measure of 12.5 Kpa or higher. **Results.** 240 patients who received DCV/SOF treatment were included. Men. 149 (62%); median age. 53 years. 99 (41%) used RBV also. HIV infected. 116 (48,3%). Eigthy six patients (36%) had a previous treatment failure (79 pegIFN / RBV, 7 pegIFN / RBV / Telaprevir). Genotype distribution was. G1 195 (81%), ST 1a 131 (67%), ST 1b 64 (33%), G2 8 (3.3%); G3 25 (10.4%); G4 11 (4.5%). In relation to the level of fibrosis, 48 (20%) were F0-F2, 30 (12.5%) were F3 and 162 (67.5%) were cirrhosis (F4). Most of the cirrhosis were compensated, only 2 patients had ascites and one had history of variceal bleeding. According to genotype, SVR obtained was. G1 97.7% (same SVR for G1a and 1b), G2 100%, G3 92%, G4 75%. Related to cirrhosis, SVR was lower only for G3 (90.5%) and G4 (75%). Global SVR was 97% (97.5% in non HIV and 96.5% in HIV infected patients). **Conclusions**. In this real life study, the SVR was obtained in 97% of cases. There were no significant differences between HIV + and HIV -. Treatment failures were observed only in cirrhotic patients, specially in those infected with G3 and G4.

P-174
ALTERATION OF HEPATIC FUNCTION IN CHIKUNGUNYA VIRUS ACUTE INFECTION. SERIES OF CASES IN A BRAZILIAN REFERENCE HOSPITAL

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Introduction. Chikungunya Fever is a human infectious disease caused by the Chikungunya virus (CHIKV) and transmitted by arthropods of the *Aedes aegypti* and *Aedes albopictus* species. The most characteristic simptoms are fever, headache, myalgia, rash and joint involvement. In Brazil, in 2017, there were 185,854 suspected cases of Chikungunya Fever, most of them in the Northeast region, with the state of Ceará being the unit with the highest number of registries. **Objective.** To analyze changes in liver function in patients with Chikungunya Fever assisted at a referral hospital in infectious diseases in the state of Ceará, Northeast Brazil. **Material and methods.** This was a retrospective study, with analysis of the initial serum levels of hepatic transaminases (TGO, TGP), albumin, total and direct bilirubin in consecutive patients with acute CHIKV infection (IgM reagent) attended in 2016 at São José Hospital of Infectious Diseases, Fortaleza, Ceará, Brazil. **Results.** We identified 165 patients with CHIKV acute infection confirmed by serology (positive IgM). Of these, 53 performed aspartate transaminase (AST) and 67 permormed alanine aminotransferase (ALT) measurements, 53 of which performed both meas-

urements and 14 performed only ALT. The mean age of the patients was 52 years (SD ± 18.8), and the majority (67.1%) were female. In the AST measurements, of the 53 patients, 32 (60.3%) presented values above the reference limits, with an average of 86 U/L (SD ± 47.6). For ALT, of the 67 patients, 36 (53.7%) presented values above the reference limit, with an average of 107 U/L (SD ± 87.5). Regarding the 53 patients who underwent simultaneous measurement of AST and ALT, 5 (9.43%) had an isolated increase in AST and 2 (3.77%) had an isolated increase in ALT. With regard to albumin, of the 165 patients, 26 were examined and only 1 (3.84%) presented albumin below 3.0 mg/dL. For total and direct bilirubin only 7 performed exams and no increase was observed. **Conclusion.** Moderate increase in hepatic aminotransaminases was observed in the majority of patients in the acute phase of CHIKV infection. There were no significant changes in albumin and bilirubin dosages. These findings reinforce the occurrence of systemic and hepatic impairment of this disease, amplifying the spectrum of clinical manifestations and potential complications that the affected patient may develop.

06 HEPATOCARCINOMA

P-07
INCIDENCE OF *DE-NOVO* HEPATOCELLULAR CARCINOMA AFTER TREATMENT WITH DIRECT ANTIVIRAL AGENTS FOR HEPATITIS C: A MULTICENTER PROSPECTIVE COHORT STUDY FROM THE LATIN AMERICAN LIVER RESEARCH, EDUCATIONAL AND AWARENESS NETWORK (LALREAN)

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** BOTH AUTHORS CONTRIBUTED EQUALLY TO THIS WORK AS FIRST AUTHORS.*
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Background and aims. Information about the development of *de-novo* hepatocellular carcinoma (HCC) after treatment with all-oral direct antiviral agents (DAA) has been mainly reported from large retrospective databases. We sought to prospectively evaluate the cumulative incidence of HCC after therapy with DAAs. **Material and methods.** A prospective multicenter cohort study from the Latin American Liver Research, Educational and Awareness Network (LALREAN) was analyzed. All patients who were placed on DAAs since their approval in 2015 were included. *De-novo* HCC was defined as the newly development of HCC after DAA treatment initiation. **Results.** From 1749 patients registered in LALREAN, 1,453 patients initiated DAAs. Baseline patient characteristics were: age 59 ± 12, male gender 52%, HIV co-infection 12%, HBV co-infection 0.4%, genotype 1a 25%, 1b 39%, 2 9%, 3 18% and 4 1%. Proportion of liver fibrosis grades were F0 1.7%, F1 14.7%, F2 9% F3 17% and F4 58% (Child Pugh A 84%, B 14% and C 2%). Clinically significant portal hypertension was observed in 29% of the cohort, with a median liver stiffness measurement (LSM) of 11.8 kPa (IQR 7.6-17.5 kPa). Overall, 81% of the initial cohort completed DAAs treatment, with an SVR12 of 96.6% and median treatment duration of 12 weeks. Median follow-up since the start of DAAs was 12 months (IQR 8-21 months). Cumulative incidence of HCC in the overall cohort was 0.02 (95% CI 0.01; 0.03) at 1 year and 0.03 (0.02; 0.05) at 2 years of follow-up. *De novo* HCC cases were diagnosed in patients with F3-F4 fibrosis grades; all of them had achieved SVR12. From a multivariate Cox regression model, presence of portal hypertension HR 12.5 (CI 4.2; 35.9) and non-SVR12 HR 6.2 (CI 1.8; 20.8) were associated with a higher risk of HCC development. **Conclusions.** Patients with advanced fibrosis who underwent DAA therapy still present high-risk for developing newly HCC, particularly in those patients who did not achieved SVR12 or with clinically significant portal hypertension. **Acknowledgments.** We thank the Latin American Liver Research, Education and Awareness Network (LALREAN) for the support of this research. LALREAN spokes and members who participated as co-authors: Adrover R, Alonso C, Ameigeiras B, Anders M,

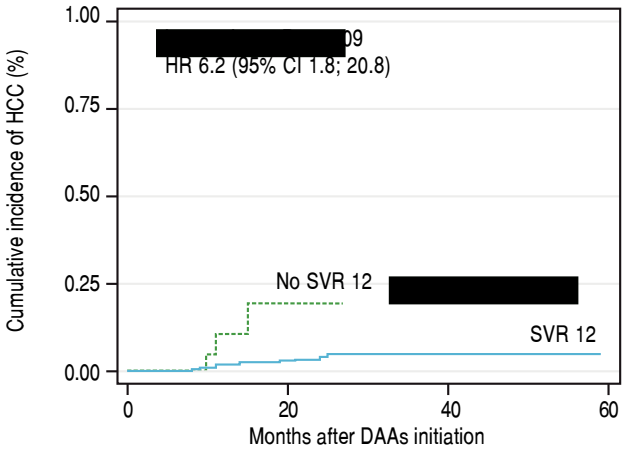

Figure (P-07). *Incidence of* de-novo *HCC according to SVR12 achievement.*

Barreyro F, Billordo A, Borzi S, Bruno A, Caballini P, Carbonetti R, Ceballos S, Cheinquer H, Cocozzela D, Deltrozzo V, Descalzi V, Estepo C, Fernández N, Figueroa S, Gadea C, Garrocho C, Hernandez N, Manero E, Mendizabal M, Mendoza C, Mengarelli S, Moreno V, Palazzo A, Peralta M, Perez D, Piñero F, Ratusnu N, Reggiardo MV, Ridruejo E, Romero G, Ruf A, Santos L, Schinoni MI, Silva M, Sixto M, Soza A, Tanno M, Tanno F, Videla M, Villa M, Vistarini C and Zerega A.

P-39
CORRELATION OF TUMOR SIZE AND SERUM ALPHA FETOPROTEIN LEVELS IN HEPATOCELLULAR CARCINOMA

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Introduction. Hepatocellular carcinoma (HCC) is the most common primary malignancy of the liver and represents the third leading cause of cancer-related deaths worldwide. Alpha fetoprotein (AFP) has been widely used as a biological marker for detection and monitor of HCC. **Aim.** To determinate the correlation between serum alpha fetoprotein and tumor size in HCC. **Material and methods.** A cross-sectional analytical study was performed at Hospital Teodoro Maldonado Carbo (HTMC) from January 2014 to June 2018. Patients enrolled in study were known cases of hepatocellular carcinoma, some of them with chronic liver disease complicated with HCC; those having metastasis in liver from anywhere were excluded. Demographic and laboratory data, ultrasound abdomen and/or CT scan abdomen for size of tumour were recorded. Based on AFP level, patients were divided into 3 groups: 1 (AFP < 20 IU/mL), 2 (AFP 20-399 IU/mL), 3 (AFP > 400 IU/mL) and also based on tumour size patients were divided into 3 groups: A (< 3 cm), B (3-5 cm), C (> 5 cm). Correlation of serum AFP levels with tumor size was analyzed by applying Spearman's rank correlation with r-values of 0.05 being considered significant. **Results.** Review of the clinical data of 107 patients we obtained male 70 (65.4%) and female 37 (34.6%) with mean age of 66.89 ± 13.27. Of these there were 54 (50.5%), 8 (7.5%), 45 (42.1%) cases in group 1, 2, 3 respectively. While in tumour size groups: 13 (12.1%) were in group A, 22 (20.6%) in group B and 72 (67.3%) in group C. There was a significant correlation of serum AFP level with tumour size in HCC. (r = -0.893, 0.000). **Conclusion.** This study shows that serum AFP has correlation with the size of tumour. Elevated AFP could be used to differentiate between early and advanced stage.

P-40
HEPATOCELLULAR CARCINOMA IN CIRRHOTIC PATIENTS IN A PARAGUAYAN LIVER REFERRAL CENTER: CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS

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Introduction. Hepatocellular carcinoma is a disease with an important variability according to the geographic location; worldwide is the second cause of cancer related death. It is most frequently associated with VHB, VHC and alcoholism. Paraguay is a low incidence country, but it is still an important cause of morbidity and mortality, especially in cirrhotic patients. **Objectives.** to establish the epidemiologic and clinical characteristics of the cirrhotic patients with hepatocellular carcinoma, as the staging and tumor characteristics. **Material and methods.** observational, descriptive, retrospective study. We used and Excell spreadsheet to gather data. The variables were expressed in frequency, mean and percentage (Figure 1). **Results**. 50 patients were included. 78% were males; the average age was 63

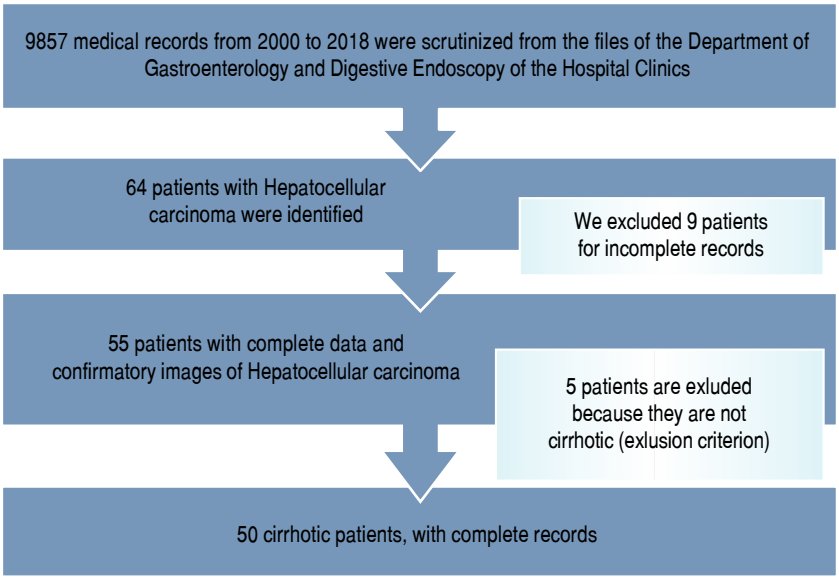

Figure 1 (P-40). *9,857 medical records from 2000 to 2018 were scrutinized from the files of the Department of Gastroenterology and Digestive Endoscopy of the Hospital of Clinics. 64 patients with hepatocellular carcinoma were identified. We excluded 9 patients for incomplete records. 55 patients with complete data and confirmatory images of hepatocellular carcinoma. Five patients are excluded because they are not cirrhotic (exclusion criterion). 50 cirrhotic patients, with complete records.*

years, range 38 to 82. The etiology of cirrhosis was alcoholism in 20 cases, cryptogenic in 11, VHB in 9, VHC in 4, nonalcoholic fatty liver disease in 4, autoimmune and PSC in 1 each. In 36% of cases, the diagnosis was first suspected by screening ultrasound; 66% of these cases were within Milan criteria. There was a solitary lesion in 64% of patients, only in 16% the principal nodule was smaller than 3 cm; in 40% it was larger than 5 cm. 4 patients were diagnosed at early stage according to the BCLC staging system (0-A); 18 in stage B, 16 in stage C and 12 in stage D. 58% received treatment, being the most frequent chemoembolization (17 cases). **Conclusion**. The first Paraguayan study of hepatocellular carcinoma shows that the most frequent etiology of cirrhosis is alcoholism, with very low incidence of VHC. Most patients are male with an average age of 63. A very low percentage is diagnosed at an early stage and nearly half of patients do not receive treatment.

P-46
THE POTENTIAL MECHANISMS OF STATINS IN HEPATOCELLULAR CARCINOMA PREVENTION

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Background. Hepatocellular carcinoma (HCC) is the most frequent primary hepatic tumor. Statins have been shown to reduce HCC incidence. Its precise anti-tumoral mechanism of action has not been established. Our aim was to evaluate TGF-β1, T_3 and glutathione levels involvement in hepatocarcinogenesis and the potential mechanisms of statins in preventing it. **Material and methods.** We usedHep-G2 cells treated withHCB (5 μM) to develop HCC. We evaluated the effects of different doses of atorvastatin (AT, 10, 20 and 30 μM) and simvastatin (SM, 5, 10, 20 μM)on proliferating cell nuclear antigen, pSMAD and pERK, TGF-β1 and deiodinase I (DI) mRNA, and TH levels. We evaluated the anti-proliferative effect of different T_3 doses (10^{-9}, 10^{-7}, 10^{-5} M) for 24 h and subsequent HCB 5 μM + T3 at the same doses for 24 h. We also analyzed the effects of HCB 0,005 μM and 5 μM on hydrogen sulfide (H2S) generation using L-cysteine sustratum at 5 mM doses for 24 h. **Results.** Theinduced increase in PCNA levels was reduced by 71% with AT 20 μM, and by 100% with AT 30 μM. It was also reduced by 80% with SM 10 μM and by 100% with SM 20 μM. Pre-incubation with AT 30 μM and SM 20 μM prevented an increase in TGF-β1 and SMADp as well as the decrease in DI mRNA levels. Pre-incubation with a TGF-β1 inhibitor (SB431542, 10 μM) prevented an increase in PCNA, SMADp, pERK and a decrease in DI mRNA levels. Hep-G2 cells were pre-treated with different T_3 doses and T_3 at 10^{-5}M prevented the proliferative effect of HCB on pERK and PCNA levels. When HepG2 cells were preincubated with L-cysteine and subsequently treated with HCB (5 μM), a lower production of H_2S (38%) was observed. This experiment strongly suggests the reduction of the generation of glutathione and possible alteration of the redox state generated in the hepatocarcinogenic process. **Conclusion.** TGF-β1, T_3 and alteration of the redox state may be partly responsible for the protective effect of statins on cell proliferation, and may be molecular targets in the treatment of HCC.

P-53
PREVALENCE OF HEPATOCELLULAR CARCINOMA IN A COHORT OF PATIENTS TREATED WITH THREE DIFFERENT ANTIVIRAL TREATMENTS FOR HEPATITIS C: ANALYSIS OF A SERIES OF CASES

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Introduction. Chronic infection with hepatitis C virus (HCV) is a serious problem that affects millions of people around the world and can progress to cirrhosis and hepatocellular carcinoma (HCC) if not diagnosed and treated early. Recently, direct action drugs (DAD) for HCV treatment were incorporated into clinical practice, achieving high rates of cure. **Objective.** To evaluate the prevalence of hepatocellular carcinoma in three groups of patients previously treated with distinct antiviral regimens in a clinical hepatology service at a school hospital in the city of São Paulo, Brazil. **Material and methods.** This is a retrospective, observational and descriptive study in a series of cases in which 410 patients followed in a specialized center in chronic hepatitis C treatment were divided into three distinct groups according to the last antiviral treatment: Interferon plus Ribavirin (INF + RBV) or Protease Inhibitors (PI) Telaprevir|Boceprevir or DAD. From there, they were submitted to medical records and evaluation of epidemiological, clinical and laboratory variables. **Results.** The total sample of this study consists of 410 patients. Of these, 191 treated HCV with INF + RBV, 53 treated with IP (TEL | BOC) and 145 with DAD. 17 (8.9%), 6 (11%) and 12 (8.2%) patients developed HCC in all three groups, respectively. Of the 35 patients who developed HCC, 26 (74%) had degree of F4 fibrosis. **Conclusion.** The development of HCC was the same among the groups that treated with Interferon and DAD. The group treated with IP was the one that most developed hepatocellular carcinoma. Cirrhosis remains the major risk factor for carcinogenesis.

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INTEGRATED SAFETY ANALYSIS FROM FOUR PHASE 3 TRIALS OF REGORAFENIB (REG)

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Introduction. REG is approved for the treatment of mCRC and GIST. Recently, the RESORCE trial showed that REG improves overall survival versus *(vs.)* placebo (PBO) in HCC patients (pts) who progressed on sorafenib. **Objectives.** This integrated analysis of 4 PBO-controlled phase 3 trials assessed the safety of REG in HCC pts (RESORCE NCT01774344) *vs.* a pooled group of pts with mCRC (CORRECT NCT01103323, CONCUR NCT01584830) or GIST (GRID NCT01271712) who received REG. **Material and methods.** We assessed treatment-emergent adverse events (TEAEs) in 1,155 pts (n = 768 REG; n = 387 PBO) with mCRC (83%; n = 636 REG; 321 PBO) or GIST (17%; n = 132 REG; 66 PBO) and in 567 pts with HCC (n = 374 REG; 193 PBO). TEAEs were coded using MedDRA v19.0 and reported regardless of relationship to study drug. Severity was graded by NCI-CTCAE v3.0/4.0. **Results.** Among the most common all-grade TEAEs in REG pts, fatigue/asthenia, dysphonia, and weight decreased occurred more frequently in the pooled CRC/GIST group than in HCC pts (Table 1). Among the most common TEAEs, grade 3 - 4 rates (REG *vs.* PBO) in the pooled CRC/GIST group were hand-foot skin reaction (HFSR); diarrhea; decreased appetite; and fatigue/asthenia. Grade 5 TEAEs occurred in 11% REG *vs.* 12% PBO pts in the pooled CRC/GIST group and in 13% REG *vs.* 20% PBO in HCC. HCC pts tended to have higher rates of peripheral edema, hypoalbuminemia, ascites, and increased AST, ALT, and bilirubin than pts with mCRC or GIST in both REG/PBO groups. Hepatobiliary disorders occurred in 15% of REG pts and 16% of PBO pts with HCC, and occurred in 15% and 9% of pts in the pooled CRC/GIST analysis. Hepatic failure was 5% with PBO and 2% with REG in pts with HCC, but similar (1% and 1%) in the pooled analysis. **Conclusion.** The pooled analysis showed that the safety profile of REG is generally consistent regardless of tumor type, except for asthenia/fatigue, dysphonia, and weight decreased. HCC pts treated with REG did not have a higher rate of hepatic failure events *vs.* PBO. **Conflicts of interest.** FJC reports no conflicts of interest. MS has received grants from Bayer, Bristol-Myers Squibb, and MSD; and advisory fees from AbbVie, Bristol-Myers Squibb, MSD, and Gilead Sciences. GM is an employee and owns stock with Bayer. SS is an employee of Bayer. SF-B is an employee and owns stock with Bayer. CW-C is an employee of Bayer. GH has received grants, advisory fees, consultancy fees, and honoraria from Bayer.

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PRACTICE PATTERNS IN THE TREATMENT OF UNRESECTABLE HEPATOCELLULAR CARCINOMA (HCC) WITH SORAFENIB (SOR) IN LATIN AMERICA ACCORDING TO CHILD - PUGH SCORE: SUBGROUP ANALYSIS OF THE GIDEON STUDY

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Introduction. GIDEON was a global, prospective, non-interventional study in patients with unresectable HCC treated with SOR in real-world practice. Due to regional variations in HCC treatment practices, we evaluated the Latin American perspective in the real-world setting. **Objectives.** To evaluate SOR treatment patterns and adverse event (AE) management across Child–Pugh subgroups in Latin American patients with HCC from GIDEON. **Material and methods.** GIDEON recruited patients with unresectable HCC for whom the decision to treat with SOR was made by their physician. Patient demographics

Table 1 (P-115).

TEAEs (MedDRA PT), all grades, %	Pooled (mCRC, GIST) REG (n = 768)	Pooled (mCRC, GIST) PBO (n = 387)	RESORCE (HCC) REG (n = 374)	RESORCE (HCC) PBO (n = 193)
Asthenia and/or fatigue	55	39	42	33
HFSR	54	8	51	7
Diarrhea	42	14	41	15
Decreased appetite	39	24	31	14
Hypertension	35	11	31	6
Infection (SOC infections and infestations)	32	17	31	18
Dysphonia	32	6	18	2
Weight decreased	25	10	13	4

Table 1 (P-116).

	Latin America			Total*		
	Child-Pugh A (n = 33)	Child-Pugh B (n = 41)	Child-Pugh C (n = 3)	Child-Pugh A (n = 1,968)	Child-Pugh B (n = 666)	Child-Pugh C (n = 74)
Initial dose, 800 mg, %	100	95	100	72	70	62
Dose reduction, %	30	12	0	40	29	26
Median treatment duration, weeks	21.3	28.9	8.6	17.6	9.9	5.6
Duration of treatment, %						
≤ 8 weeks	12	15	33	26	42	55
> 8–28 weeks	61	32	67	40	33	30
> 28 weeks	27	54	0	33	20	11

and disease characteristics, including Child-Pugh score, were recorded at baseline. SOR dosing, AEs, and efficacy were recorded throughout the study. **Results.** Of the 90 evaluable patients from Latin America (Mexico n = 60, Venezuela n = 24, Colombia n = 5, Uruguay n = 1), 33 patients (37%) had Child-Pugh A at study entry, 41 (46%) Child-Pugh B, 3 (3%) Child-Pugh C, and 13 (14%) had unknown status. The majority of patients across Child-Pugh groups received the recommended 800 mg SOR starting dose (Table 1). Patients with Child-Pugh B had fewer dose reductions and a longer median treatment duration than patients with Child-Pugh A; approximately half of patients with Child-Pugh B received treatment for > 28 weeks. AEs were similar across Child-Pugh groups. The incidence of all-grade and serious AEs was 70% and 45% for Child-Pugh A and 68% and 44% for Child-Pugh B, respectively. Diarrhea (36% *vs.* 20%) and alopecia (21% *vs.* 0) were among the more frequent AEs in Child-Pugh A versus B patients, while encephalopathy (6% *vs.* 17%) was less frequent in Child-Pugh A *vs.* B. **Conclusions.** In Latin America, sorafenib was well tolerated in both Child-Pugh A and B patients with fewer dose reductions and a longer treatment duration than the global GIDEON cohort. Sharing best practice across regions may help to improve the management of HCC with sorafenib.
Clinical trial identification. NCT00812175. **Conflicts of interest.** LLdG has received grants from Genfit, Allergan, and Gilead Sciences; and grants and advisory fees from Galmed Pharmaceuticals. LD reports no conflicts of interest. VMVA is an employee of Bayer. KN is an employee and owns stock with Bayer. MK has received grants from AbbVie, Bayer, Chugai Pharma, Daiichi Sankyo, Eisai, MSD, Otsuka, Sumitomo Dainippon Pharma, Taiho Pharmaceutical, and Takeda; advisory fees from Bayer, Bristol-Myers Squibb, Chugai Pharma, Kowa, MSD, and Taiho Pharmaceutical; and honoraria from Ajinomoto, Bayer, Eisai, and MSD.

P-122
PROGNOSTIC ACCURACY OF M-HAP SCORE IN OVERALL SURVIVAL OF PATIENTS WITH HEPATOCELLULAR CARCINOMA TREATED WITH TRANSARTERIAL CHEMOEMBOLIZATION

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Introduction. Transarterial chemoembolization (TACE) is the recommended treatment modality for patients with intermediate-stage hepatocellular carcinoma (HCC), not candidates for curative therapy. The hepatoma arterial-embolization prognostic score (M-HAP) in HCC combines liver function and tumor factor parameters, offering a scoring-system of survival prognosis, classifying patients in 4 strata, according to their better or poor prognosis (group A, B, C and D respectively). **Objective.**

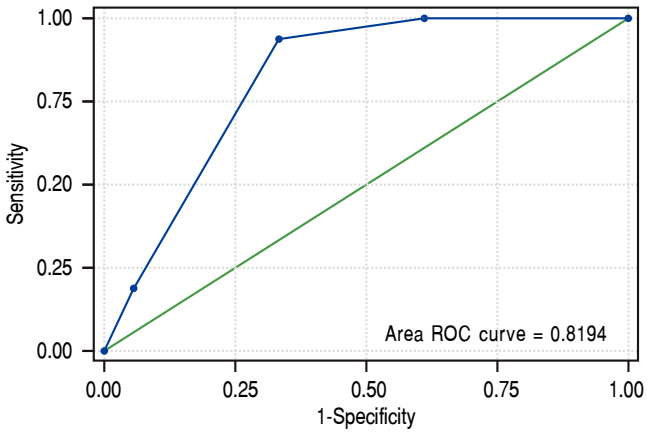

Figure 1. (P-122). ROC curve of HAP score for predicting overall survival.

To evaluate the prognostic accuracy of M-HAP score in estimating overall survival of patients with HCC undergoing TACE between 2013 and 2017 in an university center. **Material and methods.** Retrospective and analytical study of 34 patients, 20 men (59%), mean age 66.7 (50 - 83 years). Survival curves were estimated according to the M-HAP score with the Kaplan-Meier method and compared with the Log-Rank-test, calculating the area under the ROC curve to determine its predictive capacity. P value < 0.05 was considered statistically significant. **Results.** Survival curves for the different stages according to M-HAP at 6 months, one and two years were 100%, 100% and 100% for group A; 100%, 100% and 80% for group B; 88%, 70% and 31% for group C, and 25%, 25% and 25% for group D, respectively (p = 0.013). The area under the ROC curve of the M-HAP score to predict the survival of these patients was 0.8194 (95% CI 0.68-0.95). **Conclusion.** M-HAP score effectively predicts survival of patients with HCC treated with TACE, differentiating patients according to their post-TACE survival, in groups with greater survival (A and B) and worst survival (C and D). However, it requires confirmation in studies with greater number of patients.

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HAND-FOOT SKIN REACTION (HFSR) AND OVERALL SURVIVAL (OS) IN THE PHASE 3 RESORCE TRIAL OF REGORAFENIB FOR TREATMENT OF HEPATOCELLULAR CARCINOMA (HCC) PROGRESSING ON SORAFENIB

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Introduction. Skin toxicity is a known adverse effect of multikinase inhibitors, and was shown to be a predictor of OS in patients (pts) with HCC treated with sorafenib (Reig M, 2014). In the RESORCE trial, regorafenib improved OS *vs.* placebo in pts with HCC progressing on sorafenib (HR 0.62, 95% CI 0.50, 0.78; Bruix J, 2017). **Objective.** This retrospective analysis explored whether HFSR with regorafenib was associated with OS in RESORCE. **Material and methods.** Pts in RESORCE who were randomized to regorafenib 160 mg/day during the first 3 weeks of each 4-week cycle were divided into subgroups based on whether or not they had HFSR. Estimates of OS (95% CI)

Table 1 (P-131).

Characteristics	HFSR (any grade; n = 199)	No HFSR (n = 180)
Median age, yrs (range)	61 (21 - 84)	65 (19 - 85)
Geographic region Asia/rest of world, %	50 / 50	24 / 76
ECOG performance status 0/1, %	75 / 25	54 / 46
BCLC stage A/B/C, %*	1 / 17 / 83	0 / 11 / 89
AFP =400 ng/mL, %	40	46
Macrovascular invasion (MVI), %	24	35
Extrahepatic disease (EHD), %	68	72
MVI and/or EHD, %	77	83
Child–Pugh score 5/6/7, %	76 / 22 / 2	51 / 47/ 1†
Median OS, months (95% CI)	14.1 (11.7, 16.5)	6.6 (5.0, 8.5)
HR (95% CI)	0.52 (0.40, 0.67)	

**Numbers may not sum to 100 due to rounding; †Child - Pugh score missing in 1 pt.*

were calculated using the Kaplan–Meier method. Pts who were randomized, but not treated, were included in the no HFSR group for the analysis of survival. **Results.** Of 379 pts randomized, 374 received at least one dose of regorafenib. Of the treated pts, 53% (n = 199) had HFSR of any grade and 13% (n = 47) had grade 3 HFSR. Among pts with HFSR at any time during the study, 77% (n = 153) had the first HFSR event (any grade) during Cycle 1. Subgroups of pts with and without HFSR at any time had some imbalances in baseline characteristics (Table 1). OS was improved in pts who had HFSR at any time versus those who did not (Table 1). Pts who had a HFSR event during Cycle 1 also had improved OS versus those who did not (median OS 13.2 *vs.* 8.5 months; HR 0.66, 95% CI 0.51, 0.86). **Conclusion.** In this post-hoc exploratory analysis, HFSR with regorafenib was associated with improved OS, as was previously shown for sorafenib. The potential confounding influence of baseline factors requires further investigation. **Conflicts of interest.** MS has received grants from Bayer, Bristol-Myers Squibb, and MSD; and advisory fees from AbbVie, Bristol-Myers Squibb, MSD, and Gilead Sciences. FJC reports no conflicts of interest. PM reports no conflicts of interest. AG has received consultancy fees from Bayer. Y-HH reports no conflicts of interest. GB has received advisory and consultancy fees from Bayer, Ipsen, Janssen, Lilly, Novartis, Pfizer, Roche, and Servier. OY has received grants from Astellas, Bayer, Bristol-Myers Squibb, Daiichi Sankyo, Sumitomo Dainippon Pharma, Eisai, Gilead Sciences, MSD, Nippon Kayaku, Mitsubishi Tanabe Pharma, Takeda, and Chugai Pharma. OR has received honoraria from Bayer, Eisai, and Transgene; and personal fees from Bristol-Myers Squibb. VB has received honoraria from Bayer, Boehringer Ingelheim, Bristol-Myers Squibb, and MSD; and advisory and consultancy fees from Bayer, Boehringer Ingelheim, Bristol-Myers Squibb, Eisai, and Roche. RG has received advisory and consultancy fees from Bayer. GM has received advisory and consultancy fees from Bayer. PJR has received grants from Sanofi; honoraria from Amgen, Bayer, Celgene, MSD, Merck Serono, and Sirtex; and advisory and consultancy fees from Baxalta, Bristol-Myers Squibb, Celgene, Sirtex and Shire. SQ reports no conflicts of interest. TS reports no conflicts of interest. J-PB has received honoraria, advisory and consultancy fees from Bayer. IO-H has received grants from AbbVie and MSD; honoraria from Bayer; and speaker fees from Bayer and Gilead Sciences. MK has received grants from AbbVie, Bayer, Chugai Pharma, Daiichi Sankyo, Eisai, MSD, Otsuka, Sumitomo Dainippon Pharma, Taiho Pharmaceutical, and Takeda; advisory fees from Bayer, Bristol-Myers Squibb, Chugai Pharma, Kowa, MSD, and Taiho Pharmaceutical; and honoraria from Ajinomoto, Bayer, Eisai, and MSD. LX is an employee of Bayer. AB is an employee of Bayer. GM is an employee and owns stock with Bayer. GH has received grants, advisory fees, consultancy fees, and honoraria from Bayer. JB has received grants from Bayer and BTG; and consultancy fees from Daiichi Sankyo, ArQule, Bayer, Abbot, Bristol-Myers Squibb, GlaxoSmithKline, Lilly, Kowa, Novartis, Roche, Onxeo, and Sirtex; and advisory fees from BTG and Novartis.

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TREATMENT OF HEPATOCELLULAR CARCINOMA WITH SORAFENIB: A SINGLE CENTER EXPERIENCE FROM BRAZIL

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Indroduction. Hepatocellular carcinoma (HCC) is a primary malignant liver tumor, and around 90% of HCC arises on chronic liver disease. HCC treatment is guided by tumor staging, liver function and performance status. Sorafenib is a target therapy (VEGFR and multi-kinase inhibitor) indicated for subjects with well-preserved liver function and advanced HCC, or those unsuitable for loco-regional therapies. **Aim.** We present the experience of HCC treatment with sorafenib at a single Center from the Southeast of Brazil. **Material and methods.** From July 2015 until June 2018, sorafenib was indicated to 45 patients with advanced HCC. Among them, 36 subjects had started the therapy, whereas 9 patients had liver decompensation before sorafenib. **Results**. The mean age of HCC patients was 61 ± 9 years (range 46-79 years old), and 84,5% were male.

Three patients had HCC recurrence, 2 (two of them) and 7 years after deceased donor liver transplantation. The other 42 subjects had underling cirrhosis. Concerning the underlying etiology of liver disease, 53% of HCC patients had chronic hepatitis C, followed by 31% with alcoholic liver disease, 11% with hepatitis B, and 5% was cryptogenic. The majority of the patients were Child-Turcotte-Pugh A (91%), but 4 subjects (9%) were Child-Turcotte-Pugh B. The mean MELD score (n = 31) was 9 ± 2.4 (range 6-14). Dynamic image (MRI or CT scan), with radiological features of typical HCC, was the main diagnostic tool (80%), followed by biopsy (20%). Single nodule, multinodular HCC, and infiltrative disease were present in 33.4%, 28.9% and 37.7% of the patients, respectively. Three patients had HCC recurrence post-surgical resection, and 10 subjects had been treated with HCC chemoembolization, before sorafenib. Alpha fetoprotein level (n = 32) was > 400 ng/mL in 9 patients. Vascular invasion and metastasis were present in 24 and 8 subjects, respectively. Most patients (62%) started with full sorafenib doses (800 mg/day). Drug reduction was performed in 54.5% of the patients (18/33). The most frequent adverse events were: Liver decompensation (36%); diarrhea (28%); hand-foot syndrome (25%); and fatigue (25%). The average time of sorafenib treatment (n = 26) was 5.7 months (range 7 days - 14.4 months). Twelve patients were treated with sorafenib for more than 6 months. **Conclusion.** These are the initial data in advanced HCC treatment at a university hospital in the Southeast of Brazil.

07 HEPATOTOXICITY

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NITROFURANTOIN-INDUCED AUTOIMMUNE LIVER DISEASE: AN ANALYSIS FROM THE LATIN AMERICAN AND SPANISH DILI REGISTRIES

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Background. Nitrofurantoin (NF) is a synthetic antibiotic prescribed for treatment and prophylaxis of urinary tract infections (UTI). **Aim.** To characterize the spectrum of phenotypes and outcome in the largest series of NF-induced hepatotoxicity (DILI) reported to date. **Material and methods.** We present 18 patients developing liver damage by NF from the Latin American (n = 16) and Spanish (n = 2) DILI registries. Other competing liver causes (viral, autoimmune, metabolic, obstructive, alcohol and ischemic) were ruled out. Demographics, clinical presentation, laboratory findings and outcome were analyzed. Causality was assessed by RUCAM scale. Statistical analysis: Fisher exact and U-Mann Whitney tests. The results are expressed in percentages and median values (Mdn). **Results.** All patients were women (Mdn: 59 y, range: 28-86). NF 100 mg/day as UTI prophylaxis in 14 (80%) patients. Mdn latency of treatment was 132 days. Eleven patients (61%) presented jaundice. Hepatocellular and cholestatic/mixed patterns were present in 15 (83%) and 3 (17%) patients, respectively. Mdn liver tests (xULN) were: ALT 16.4, AST 12.9, ALP 1.5 and total bilirubin 3.4 mg/dL. Positive ANA was present in 12 (67%) patients with titers > 1/320 in 6 of them, AMA (+) in 2 (11%) and ASMA (+) in 3 (17%). Eosinophilia was present in 4 cases (22%). Half of the patients were hospitalized. Mdn time to recovery was 78.5 days in 14 patients, with 4 (22%) patients developing DILI with autoimmune features and requiring steroid therapy with no recurrence after stopping. Severity index was mild: 34% (6/18), moderate: 61% (11/18) and severe: 5% (1/18). Two patients died and no patients required liver transplantation. RUCAM scale: 12 (67%) "probable", 3 (17%) "possible" and 3 (17%) "highly probable". **Conclusion.** NF mainly presents as hepatocellular injury after prolonged duration of treatment often accompanied by autoimmunity features. In four patients NF induced-liver injury was indistinguishable from classic autoimmune hepatitis responsive to corticoesteroids.

P-44
PHARMACOGENOMIC OF TUBERCULOSIS NEW PREDICTION MODEL OF ANTI-TUBERCULOSIS DRUG-INDUCED HEPATOTOXICITY

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Introduction. Anti-tuberculosis drug-induced hepatotoxicity (ATDH) is a serious, potentially fatal and prevalent adverse drug reaction. Some studies found an association between genetic variations in enzymes that metabolize anti-tuberculosis drugs and ATDH development. **Objectives.** To evaluate the association between environmental factors and genetic variations in enzymes that metabolize anti-tuberculosis drugs with ATDH. To investigate the potential gene–gene and gene-environment interactions as well as their association with ATDH development in a population of hospitalized tuberculosis patients from Buenos Aires, Argentina. **Material and methods.** We analyzed clinical and demographic variables in 345 patiens (96 with ATDH). n-acetyltranferase enzyme (NAT2), cytochrome p450 2e1 (CYP2E1), glutatione s-tranferase theta 1 (GSTT1) and glutatione s-tranferase mu 1 genetics variations were detected using gene sequencing, polymerase chain reaction (PCR) and PCR-RFLP. A binary logistic regression analysis was performed

to compare patients with and without ATDH. The multifactor dimensionality reduction method was used to examine genetic and environmental interactions in association with ATDH. **Results.** slow acetylator profile [OR (95% CI) = 3.02 (1.82-5.00); $p < 0.001$], genotypes carrying the χ^2 variant [OR (95% CI) = 2.16 (1.33-3.51); $p = 0.002$] or the A4 variant of CYP2E1 [OR (95% CI) = 2.13 (1.06-4.29); $p = 0.050$] and females [OR (95% CI) = 1.94 (1.20-3.14); $p = 0.006$] were independent predictor variables for ATDH. Patients carrying slow acetylator profile and the χ^2 variant exhibited an increased risk [OR (95% CI) = 7.068 (3.34-14.95); $p < 0.001$]. We also identified a synergic interaction (epistasis) between *GSTT1* and *CYP2E1* associated with an increased risk for ATDH. A meaningful gene-environment interaction was associated with an increased risk of ATDH [TBA = 0.675, ($p = 0.001$) and CVC = 10/10]. **Conclusion.** The considerable number of TB patients in our country supports the use of pharmacogenetic testing and a comprehensive clinical history to identify patients with a high risk of suffering hepatotoxicity.

P-45
PREDICTION MODEL FOR 5-MONTH MORTALITY USING ALCOHOL AND ALBUMIN GRAMS AS INDEPENDENT FACTORS IN PATIENTS WITH TOXIC HEPATITIS DUE TO SEVERE ALCOHOL IN A TERTIARY HOSPITAL IN MEXICO CITY

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Introduction. Alcoholic hepatitis (HA) is a serious form of alcoholic liver disease. With mortality up to 60% in the Latin American population. The pathophysiology of HA is multifactorial due to the interaction between ethanol metabolism, the participation of the proinflammatory response and innate immunity. Chronic alcohol consumption is associated with the development of HA, so that the amount of alcohol (expressed in grams) could contribute to the prognosis and impact on mortality, as well as malnutrition where a marker is albumin. **Objective.** To develop a predictive model of mortality in patients with severe alcoholic hepatitis at 5 months using the amount of grams of alcohol and albumin as independent factors. **Material and methods.** Prospective, longitudinal study in patients with severe AH (Maddrey > 32 points). Descriptive statistics were used for the demographic characteristics of the population. We applied a proportional hazards model, using COX regression by steps to evaluate alcohol/albumin/CRP grams in 5-month survival. **Results.** A total of 51 patients were analyzed, 45 men, aged 42 years ± 10.9 years. 12 patients (48%) had the event studied 13 patients (52%) censored. The Cox model (CRP/g of alcohol/CRP) were predictive variables grams of alcohol OR 2.5 (1.60-5.241 IC 95%) ($p < 0.016$) and albumin OR 6.87 (1.904-2.74 C 95%) ($p < 0.03$). In a second model including the PCR/albumin index with a cut-off point of 12 points, no significant differences were found. **Conclusions.** Alcohol grams and hypoalbuminemia are risk factors for mortality in patients with HA. It is necessary to increase the number of samples to evaluate the impact on mortality.

P-51
PROFILE OF BODYBUILDERS ANABOLIC STEROID USERS IN THREE BRAZILIAN CITIES

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Introduction. The use of anabolic-androgenic steroids (AAS), non-prescription, by bodybuilders often occurs in Brazil. Among the laboratory abnormalities associated are: elevated liver enzymes, erythrocyte indexes and dyslipidemia markers. The SF-36 methodology informs the population welfare. AAS may interfere with the metabolism of the muscle-tendon insertions, reducing flexibility. **Objective.** Evaluate demographically, physically and biologically a sample of bodybuilders, users and non-users of AAS in the three cities of Salvador, Simões Filho and Camaçari, Bahia State, Brazil. **Material and methods.** 45 volunteers bodybuilders were assessed on the use of AAS; quality of life using the SF-36 methodology; hematological, biochemical and immunological examinations; demographic data, research on fitness practice, hamstring flexibility and jumping power. **Results.** Of the 45 volunteers evaluated, 48.9% were AAS users (22/45) and 51.1% non-users. The average BMI of users was 26.87 and 24.43 of non-users ($p < 0.05$). Stanozolol prevailed as drugs used; doses ranging from 250 mg up to 1,000 mg. Hemoglobin, hematocrit, red blood cells, triglycerides, creatinine and VLDL of users showed values above and HDL below those found for non-users ($p < 0.05$). The average AST of users was 37.18 (16.16) and 41.87 (20.62) of non-users; ALT 37.32 (17.90) of users and 34.78 (15.89) of non-users group. Users had lower muscle-tendon flexibility in hamstring stretching; however, the quality of life was similar in both, with intermediate to high levels. **Conclusion.** Users had BMI, erythrogram rates and lipid markers (except cholesterol) higher than non-users, and HDL at levels lower than non-users. The average of aminotransferases was within the normal range but with standard deviation demonstrating high rates in some patients. On average AAS was used for about three years, and users ranking the attitude as harmful and were mostly with side effects such as hirsutism and increased aggressiveness and irritability.

Table 1 (P-51). Determination of biochemical analytes – mean and standard deviation (n = 45)

Analytics rates	Users (n = 22) (Mean ± (SD)		Non-users (n = 23) Mean ± (SD)		P-value T-test)
Glucose (mg/dL)	80.55	(8.61)	81.48	(6.40)	0.68
Triglycerides (mg/dL)	128.45	(86.15)	83.65	(33.29)	0.03
BUN (mg/dL)	27.50	(6.67)	26.96	(8.39)	0.81
Creatinine (mg/dL)	0.97	(0.17)	0.87	(0.16)	0.04
Total bilirubin (mg/dL)	0.51	(0.26)	0.56	(0.40)	0.61
Direct bilirubin (mg/dL)	0.22	(0.12)	0.24	(0.16)	0.67
Indirect bilirubin (mg/dL)	0.29	(0.18)	0.32	(0.25)	0.62
AST (U/L)	37.18	(16.16)	41.87	(20.62)	0.40
ALT (U/L)	37.32	(17.90)	34.78	(15.89)	0.62
GGT (U/L)	29.50	(13.75)	33.48	(17.31)	0.40
Total cholesterol (mg/dL)	158.82	(44.02)	162.74	(33.98)	0.74
HDL (mg/dL)	39.00	(11.66)	45.70	(9.25)	0.04
LDL (mg/dL)	102.33	(34.28)	100.22	(27.97)	0.82
VLDL (mg/dL)	23.10	(11.85)	16.83	(6.72)	0.04
ALP (U/L)	68.77	(21.47)	81.04	(20.58)	0.06
Total protein (g/dL)	7.34	(0.34)	7.43	(0.47)	0.47
Albumin (g/dL)	3.99	(0.31)	3.92	(0.26)	0.457
Globulin (g/dL)	3.36	(0.33)	3.51	(0.46)	0.21
LD (U/L)	382.32	(71.68)	411.57	(128.37)	0.35
CRP (mg/L)	6.59	(1.23)	6.20	(0.25)	0.15
Ferritin (ng/mL)	181.87	(105.22)	122.84	(113.61)	0.08

SD: standard deviation.

P-55
DRUG-INDUCED LIVER INJURY DELAYING THE DIAGNOSIS OF HODGKIN LYMPHOMA PRESENTED AS VANISHING BILE DUCT SYNDROME, A CASE REPORT

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Introduction. Vanishing Bile Duct Syndrome (VBDS) is a rare acquired condition, characterized by progressive loss of intrahepatic bile ducts, evidenced in liver biopsy, leading to ductopenia and cholestasis. It is associated with infections, ischemia, drug adverse reactions, neoplasms, autoimmune and genetic disorders. **Case report.** We report an unusual case of a 25-year-old female, who developed VBDS related to Hodgkin lymphoma (HL), which had the diagnosis delayed by a drug-induced liver injury (DILI). The patient had a history of jaundice and pruritus following the use of manipulated drugs for weight loss to relieve a dorsal pain, which included several potentially hepatotoxic substances (field horsetail, garcinia), besides ketoprofen as symptomatic. At admission laboratory tests showed a marked elevation of total bilirubin levels and hepatic enzymes (mixed liver injury) with normal coagulation, indicating the DILI hypothesis. All potentially harmful substances were discontinued and ursodeoxycholic acid was prescribed (10 mg/kg/day). After partial clinical and laboratory improvement in the first month, bilirubin levels and canalicular enzymes rose again and a liver biopsy was performed, revealing chronic hepatopathy of biliary pattern, cholestasis and loss of intrahepatic bile ducts. During the next 5 months, she reported weight loss, worsening of pruritus and ultrasonography showed lymphadenopathy and splenomegaly. Cervical lymph node exeresis was consisted with Nodular-Sclerosis Classical HL and the patient is currently under chemotherapy. It is not possible to define whether VBDS was caused by HL, DILI or both. It is certain that the diagnosis of DILI was an initial confounding factor and could act as a trigger for the manifestation of lymphoma as well as a contributing element to ductopenia. It is crucial for physicians to create a broad diagnostic approach for patients with suspected VBDS especially to rule out malignancies. The authors have no conflict of interest to declare.

P-60
A DIETILNITROSAMINE-INDUCED HEPATOCARCINOGENESIS MOUSE MODEL AS A TOOL FOR THE STUDY OF THE SYNERGIC EFFECT OF DIFFERENT HEPATOTOXIC AGENTS

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Introduction. Hepatocellular carcinoma (HCC) is the second most lethal cancer worldwide. To chronologically reproduce its

progression, several rodent models have been developed using hepatocarcinogenic agents such as high diethylnitrosamine (DEN) doses. However, in humans the HCC appears after a long exposition period to small amounts of different etiological agents including DEN. Thus, we characterized a HCC experimental model administering low DEN doses to use it for determining the HCC induction by the synergistic effect of low amounts of hepatotoxic agents. **Aim.** To develop an experimental mouse model that closer reproduces the HCC as occurs in humans. **Material and methods.** C57BL/6 male mice were subjected to 2.5, 5, and 20 DEN mg/kg body weight (twice/week, i.p.), during 6, 10, 14 and 18 weeks. Then, we determine its effect on HCC markers, cell proliferation and apoptosis, DEN metabolism and oxidative damage, through molecular biology and immunological analyses. **Results.** DEN (20 mg/kg) induced collagen fibers production, tumors and lung metastasis (60% animals) after 18 week. Although the expression of the tumor marker Gstp1 and that of Cyp2e1, a DEN metabolizer enzyme, was induced by DEN at 2.5 and 5, it decreased by 20 mg/kg; interestingly, their expressions were mainly located in nodular areas. While the expression of proliferation markers Ki67 and Pcna was increased, that of procaspase-3 was decreased by all DEN doses. These were associated to increased levels of both reactive oxygen species and 4-hydroxynonenal adducts. **Conclusion.** Results indicate that while DEN at 20 mg/kg reproduces the HCC progression, at 2.5, 5, mg/kg might be useful to determine the synergistic effects of hepatotoxic agents such as DEN/ethanol, in order to look for therapeutic targets either earlier or up to 18 weeks after DEN exposition.

P-84
PROSPECTIVE ANALYSIS OF A SERIES OF CASES OF HEPATOTOXICITY FROM AN SPECIFICALLY REFERENCE OUTPATIENT CLINIC OF THE FEDERAL UNIVERSITY OF BAHIA, BRAZIL

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Introduction. Hepatotoxicity is an emerging, little known problem that is diagnosed often only belatedly. New studies are being done to understand more about the behavior of this disease. **Objectives.** To characterize the profile and clinical characteristics of patients with hepatotoxicity in a reference center in Brazil. **Material and methods.** A prospective, casuistic, study was performed with 37 patients, admitted and followed up between 2015 and 2018, in a multidisciplinary outpatient clinic of hepatotoxicity for analysis of clinical characteristics and causes of hepatotoxicity. These were confirmed after excluding viral, autoimmune and others etiologies. The statitistical analysis was descriptive. **Results.** 65.79% were women, age mean: 41.9 ± 13.8 years. Hepatocellular pattern: 64.86% and ALT mean: 1112.88 ± 885.30 U.I./L with a clinical resolution time of 72.06 ± 54.07 days. Cholestatic pattern: 16.22%, ALP mean: 343 ± 167.08 U.I./L with a clinical resolution time of 156 ± 65.18 days. The hepatotoxicity cases had spontaneous resolution in 89.18%, of which 5.7% required treatment. Chronic cases (5.41%) were secundary to nitrofurantoin and phentoyn . The transplant case (2.71%) was by *Ruellia bahiensys* tea and the fatal case (2.71%) was by *Maytenus ilicifolia* tea. The main causes of hepatotoxicity were HDS (27.03%), tuberculostatic and NSAIDs for (13.51%), antibiotics for 10.81%, anabolic steroids for 8.11%. Lesion severity: mild 30.56%, moderate 33.33%, moderate-severe 27.78 %, severe: 2.78% and 5.56% fatal/transplantation, the latter caused by the use of HDS. Jaundice occurred in 56.46% of patients. These data can be seen in the table below. **Conclusion.** In our environment, the consumption of HDS is one of the main causes of hepatotoxicity. Studies such as ours show the importance of understanding hepatotoxicity better in order to prevent its occurrence. **Financial support.** Maria Emília Pedreira Freire de Carvalho Foundation. We declare that there are no conflicts of interest.

Table 1 (P-84).

Gender	
Male n (%)	13 (35.13%)
Female n (%)	34 (64.87%)
Age	41.9 ± 13.8
Hepatocellular pattern	64.86%
• ALT levels (U.I./L)	702 ± 562.1
• Resolution (days)	83 ± 69.9
Cholestatic pattern	16.22%
• ALP change (U.I./L)	343 ± 167.08
• Resolution (days)	156 ± 65.18%
Cases resolved	89.18%
• % Treatment	5.7%
% Chronic cases	5.41%
% Fatal cases/transplants	5.41%
Frequency of jaundice	56.46%
Frequency of lesion sevetiry	
• Mild	30.56%
• Moderate	33.33%
• Moderate-Severe	27.78%
• Severe	2.78%
• Fatal/Transplant	5.56%
Frequency of HDS and DILI	
• HDS	27,03%
• Tuberculostatic	13,51%
• SNAIDs	13,51%
• Antibiotics	10,81%
• Anabolic steroids	8,11%
• Anticonvulsants	5,41%
• Antipsychotics	2,70%
• Antineoplasic	2,70%
• Antiretroviral	2,70%
• Antimalarial	2,70%
• Thyroid antagonist	2,70%
• Antiparasitic	2,70%
• Estrogen antagonist	2,70%
Total	100%

P-85
COMPARATIVE ANALYSIS BETWEEN HEPATOTOXICITY CAUSED BY HERBALS OR DIETARY SUPPLEMENTS *VS.* CONVENTIONAL DRUGS IN A PROSPECTIVE COHORT

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Introduction. Hepatotoxicity is a poorly known disease but very common, often underdiagnosed, that can be caused by conventional drugs (CD) or Herbal or Dietary Supplements (HDS). **Objectives.** Analyze biological and clinical differences between hepatotoxicity caused by HDS and conventional drugs in a multidisciplinary outpatient clinic for hepatotoxicity. **Material and methods.** Transversal study performed with 36 patients, admitted and followed up between 2015 and 2018, in a multidisciplinary outpatient clinic of hepatotoxicity to determine the differences between HDS and DILI, these were confirmed after excluding viral, autoimmune and others etiologies. The statitistical analysis was descriptive. **Results.** 27.8% had DILI for HDS; mean age 39.3 ± 8.8 years, 70% women. 70% had hepatocellular pattern, 30% cholestatic/mixed. The mean ALT was 795.6 ± 459.1 U.I./L (hepatocellular pattern) and the mean ALP was 305 ± 203.3 U.I./L (cholestatic pattern). The resolution occurred in 65 ± 43.9 days. The lesions were predominantly mild (60%) and fatal/transplant (20%). Fatal lesions/transplantation occurred by *Maytenus ilicifolia* tea and *Ruellia bahiensys* tea. 72.2% had DILI per CD; mean age 42.2 ± 12.8 years, 61.5% women. 61.6% had hepatocellular pattern, 38.4% cholestatic/mixed. The mean ALT was 1318.31 ± 874.85 U.I./L (Hepatocellular pattern) The mean ALP was 374.6 ± 156.35 U.I./L (cholestatic pattern). The mean resolution was 80.65 ± 47.75 days (Table 1). Chronic DILI occurred in 7.7% of nitrofurantoin and phenytoin. The lesions were predominantly moderate (42.3%) and moderate-severe (34.6%) Antibiotics, NSAIDs and tuberculostatics (19.3% each) were the main causes of DILI by CD. **Conclusion.** In our environment, the consumption of HDS is one of the main causes of hepatotoxicity, followed by antibiotics, NSAIDs and tuberculostatics. This study shows the importance of understanding hepatotoxicity better in order to prevent its occurrence. **Financial support.** Maria Emília Pedreira Freire de Carvalho Foundation. We declare that there are no conflicts of interest.

P-110
ASSESSING THE NEW DRUG HEPATOTOXICITY POTENTIAL CLASSIFICATION USING THE LATIN AMERICAN DILI NETWORK

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Background. A recent publication categorizes hepatotoxic potential of drugs listed in LiverTox® website into 5 categories based on numbers of published drug-induced liver injury

Table 1 (P-85).

	HDS	Conventional Drugs
Total Frequency (n)	27.8% (10)	72.2% (26)
Gender (n)	70% Female (7)	61.6% Female (16)
Age	39.3 ± 8.8 years	42.2 ± 12.8 years
Phenotypic pattern (n)	70% Hepatocellular (10) 20% Cholestatic (20) 10% Mixed (10)	61.6% Hepatocellular (16) 19.2% Cholestatic (5) 19.2% Mixed (5)
Enzyme Pattern	Hepatocellular: ALT 795.6 ± 459.1 U.I./L Cholestatic: ALP 305 ± 203.3 U.I./L	Hepatocellular: ALT 1318.31 ± 874.85 U.I./L Cholestatic: ALP 374.6 ± 156.35 U.I./L.
Resolution time	65 ± 43.9 days	80.65 ± 47.75 days%
Frequency of Jaundice	40% (4)	69.2% (18)
% Chronic Cases (n)	0%	7.7% (2)
% Injury Severity (n)		
• Mild	60% (6)	19.2% (5)
• Moderate	20% (2)	42.3% (11)
• Moderate-Severo	0%	34.6% (9)
• Severe	0%	3.9% (1)
• Fatal/Transplant	20% (2)	0%

(DILI) case reports (A: ≥ 50 reports; B: 12-49; C: 4-11; D: 1-3; E: 0) (Björnsson & Hoofnagle, 2016). We aimed to ensure this categorization using the SLATIN DILI Network database and large published DILI cohorts. **Material and methods.** We classified 92 causative drugs from 279 cases enrolled in the SLATIN DILI Network into the 5 categories. We also collected information on causative drugs in adjudicated DILI cases from other established DILI registries and drug-induced ALF cases from previous publications (Suzuki, *et al*. 2010, Devarbhavi, *et al*. 2017, Reuben, *et al*. 2014, Russo, *et al*. 2004) and drugs that led to regulatory actions due to hepatotoxicity regardless of countries. **Results.** Thirty-two (39%) cases in the SLATIN DILI Network were classified as category A, 23 (28%) as B, 10 (12%) as C, 6 (7.2%) as D and 3 (3.6%) as E. Another 7 drugs (8.4%) (e.g. pazopanib and dicoumarol) were unclassified. These unclassified drugs were responsible for 27% of the ALF cases in the registry. Drugs that have been withdrawn from the market (e.g. nevirapine, nimesulide and ketoconazole) were found in category A. In addition, drugs leading to hepatotoxicity safety warnings were present in all hepatotoxicity categories. **Conclusion.** Due to publication biases, classification of drugs' hepatotoxic potential based on numbers of published case reports can be misleading. Further elements such as DILI frequency, severity and causality should also be considered together with information on liver safety regulatory measures. Drugs used in the current population differ from other DILI cohorts due to different prescription policies. Hence, the importance of international collaborative efforts to provide a more inclusive, global drug list should be emphasized. **Funding.** AEMPS, FEDER(PI15-01440). CIBERehd-ISCIII.

P-123
CLINICAL PHENOTYPE OF DRESS CASES INCLUDED IN THE SPANISH AND LATIN-AMERICAN DILI REGISTRIES

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Background. Severe cutaneous adverse reactions can manifest in a wide spectrum of heterogeneous clinical presentations, including drug reaction with eosinophilia and systemic symptoms (DRESS). **Aims.** To evaluate clinical phenotype, outcome and causative agents associated with DRESS. **Material and methods.** Dress cases were defined according to the International Registry of Severe Cutaneous Adverse Reaction (RegiSCAR). Demographics, clinical presentation and outcome were compared between DILI cases without hypersensitivity features (non-DRESS DILI) and DRESS cases included in the Spanish (n = 35/920) and Latin-American (n = 18/269) DILI registries. **Results.** Fifty-three patients with DRESS syndrome were identified compared to 620 non-DRESS DILI cases, with a slightly higher proportion of women in the latter group (53% *vs*. 47%). Mean age at onset was similar in both groups, 53 *vs*. 50 years. All DRESS cases presented rash (three with severe toxicoderma), 19 (36%) lymphopenia and 39 (74%) eosinophilia. Positive autoantibodies were detected in 24% of non-DRESS DILI *vs*. 9% of DRESS patients (p = 0.037). Hospitalization was higher for DRESS cases (77% *vs*. 51%, p = 0.001). Type of liver injury differed between the groups, with cholestatic-mixed damage predominating in DRESS (57.1%), and hepatocellular damage (66.5%) in non-DRESS DILI (p = 0.001). Severity also differed, with 15% severe and no fatal cases in DRESS and 7% severe and 5% fatal cases in non-DRESS DILI (p = 0.047). The most frequent causative drugs in the DRESS group were amoxicillin-clavulanate (7 cases), carbamazepine (6), allopurinol (4) and lamotrigine (3). **Conclusion.** Compared to non-DRESS DILI, DRESS cases presented a predominance of cholestatic-mixed pattern and greater severity without mortality. Amoxicillin-clavulanate stands out as a leading cause of DRESS syndrome in the Spanish DILI Registry, while antiepileptic predominates in Latin-America, similar to previously published studies. **Funding.** AEMPS, FEDER(PI15-01440, PI-0274/2016, PI-0285-2016). CIBERehd-ISCIII.

P-153
ACUTE SEVERE HEPATITIS SECONDARY TO NILOTINIB IN A CHRONIC MYELOID LEUKEMIA PATIENT, FIRST CASE REPORT IN LITERATURE

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Introduction. Nilotinib is tyrosine kinase inhibitor used for the treatment of chronic myeloid leukemia and even as a safe alternative in patients with imatinib or other tyrosin kinase inhibitor-induced hepatitis and secondary liver failure, without identifying any case in the literature secondary to Nilotinib. **Objective.** Describing the first reported case of acute severe hepatitis due to nilotinib. **Material and methods.** Case report of a 28-year old male patient with a diagnosis of chronic myeloid leukemia in treatment with nilotinib, who presented jaundice and high transaminase levels of up to 10 times baseline, and in risk of liver failure due to severe hyperbilirubinemia (35 mg/dL) and coagulopathy with INR 3,5. Abdominal ultrasound demonstrated homogeneuous mild hepatoesplenomegaly and portal doppler examination were normal. CT scan was carried out identifying hepatomegaly. Hepatic biopsy showed submassive hepatitis with necrosis and sever lobular necroinflammatory activity. Serological test for infectious hepatitis (Hepatitis B, C, Epstein-Barr and citomegalovirus) metabolic (ferritin, ceruloplasmin) and autoimmune antibodies were negative, considering secondary to nilotinib. **Results.** Nilotinib was stopped, and the patient started prednisone 60 mg daily, identifying a reduction in bilirubin levels until 2 mg/dL after one month of treatment with a normalization in the transaminase and prothrombin levels. **Conclusion.** Hepatotoxicity due to tyrosine kinase inhibitors in the treatment of chronic myeloid leuke-

mia is not infrequent, considering the use of nilotinib as a safe therapy in cases of drug induced liver injury secondary. However, this case identify the first reported case of severe hepatotoxicity to a drug previously used safely in cases of liver failure or hepatitis by other molecules of the same family. Treatment withdrawal and early use of corticosteroids are the treatment in the management of this patients.

08 PORTAL HYPERTENSION

P-83
HISTOPATHOLOCIAL, CLINICAL AND EPIDEMIOLOGICAL FEATURES OF HEPATOPORTAL SCLEROSIS IN A CENTER OF BIOPSIES IN BAHIA, BRAZIL. INTERIM ANALYSIS

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Introduction. The hepatoportal sclerosis (HPS) is an intriguing disease with a range of clinical presentations, varying from asymptomatic forms to severe portal hypertension. It can be caused by hematologic disorders, herbal consumption and drugs, but many cases are still cryptogenic. In Brazil, there are few papers about this topic. **Objectives.** To characterize the profile of patients with HPS and to demonstrate the histopathological characteristics of HPS in our referral center in Brasil. **Material and methods.** A retrospective, casuistic, study was carried out with a review of the charts of 62 patients with HPS for analysis of clinical and epidemiological characteristics, and 10 biopsies were reviewed so far, in order to analyze the main histopathological characteristics of HPS. The statitistical analysis was descriptive. **Results.** In our study, 58% were female, mean age 48.3 ± 16.7 years. AST mean: 60.6 U.I. ± 56.4, ALT mean: 71.7 ± 63.9, ALP 234 U.I. ± 246.7 and GGT 169.9 ± 152.9 U.I. Histopathological features: Obliterative portal venopathy (OPV) was present in 75.6% of the portal spaces of the 10 biopsies. Parenchymal atrophy was present in 60% of the patients, sinusoidal dilation in 30%, presence of fibrous septa in 50%, and dense portal fibrosis in 100% of the patients. Regenerative nodular hyperplasia was present in 30% of the patients, as can be seen in the table below. **Conclusion.** The main features of HPS was obliterative portal venopathy, parenchymal atrophy, sinusoidal dilatation, fibrous septa and dense portal fibrosis. This interim analysis was the first step to understand the HPS in our environment. More studies are required to make it to possible to understand about etiology, risk factors, prevention, diagnosis, treatment and prognosis of the HPS. We declare that there are no conflicts of interest.

Table 1 (P-83).

Gender	
Male n (%)	26 (42%)
Female n (%)	36 (58%)
Age	48.3 ± 16.7
AST level	60.6 ± 56.4
ALT level	71.7 ± 63.9
ALP level	234.1 ± 246.7
GGT level	169.9 ± 152.9
% Portal tracts with OPV	76%
% Parenchymal atrophy	60%
% Sinusoidal dilatacion	30%
% Presence of fibrous septa	50%
% Dense portal fibrosis	100%
% RNH	30%

P-126
SECONDARY PROPHYLAXIS OF VARICOSE DIGESTIVE HEMORRHAGE CAUSED BY VENOUS OBSTRUCTION EXTRAHETIC PORTAL (EHPVO), IN THE ABSENCE OF CIRRHOSIS

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Introduction. There is scarce information on the ideal management of patients with varicose digestive hemorrhage, secondary to EHPVO. The recommendation is to maintain a behavior similar to portal hypertension of cirrhotic origin. **Objectives.** To determine the efficacy of endoscopic eradication combined treatment with beta-blockers in the secondary prophylaxis of varicose digestive hemorrhage, in patients with EHPVO, non-cirrhotic and tumor-free, measuring the free survival of bleeding at 1 and 2 years. **Material and methods.** Retrospective study, cross section. Twenty-two adult patients, diagnosed with EHPVO, attended between January 2005 and December 2015, at the Clinical Hospital of San Lorenzo-Paraguay, who presented with varicose digestive hemorrhage and underwent secondary prophylaxis with endoscopic eradication treatment combined with propranolol. Variables: Age, sex, endoscopic findings, episodes of bleeding before and after treatment, number of therapeutic endoscopic sessions, follow-up time and free survival of bleeding at 1 and 2 years. Ethics: there is no conflict of interest. **Results.** 50% male, with an average age of 30 years. The majority presented large esophageal varices, 50% with signs predictive of bleeding. There were between 1-14 episodes of pre-treatment bleeding; 2 patients presented rebleeding between sessions between 3 and 12 months of follow-up and another 2 after eradication both at 24 months of follow-up. In all, the diagnosis of EHPVO was made by Doppler Ultrasound, 5 of them were CT scans, 3 patients required biopsy to demonstrate healthy liver, and 3 hypercoagulability syndromes were found. It required between 1-6 endoscopy sessions to achieve eradication, achieving 100% free bleeding survival per year and 90% at 2 years with a median follow-up of 12 months (2 -156). **Conclusion.** In this series of patients with varicose digestive hemorrhage secondary to EHPVO, endoscopic therapy combined with beta-blockers proved very effective.

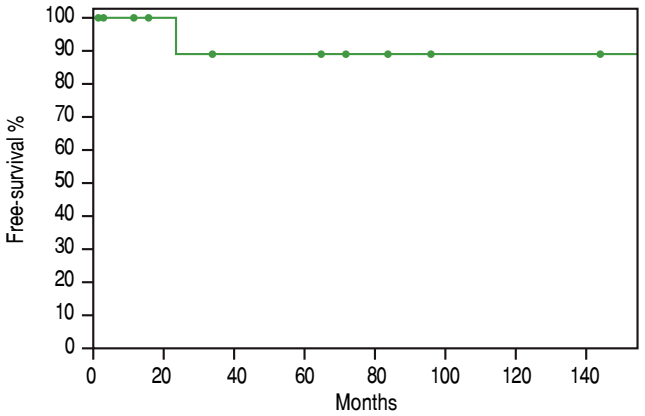

Figure 1 (P-126). *Free survival of esophageal variceal beeding in patients undergoing secondary prohylaxis.*

09 METABOLIC

P-176
GAUCHER DISEASE AND RENAL AGENESIS: AN UNUSUAL CASE

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Introduction. Gaucher's Disease (GD) is an inherited metabolic disorder. It is an autosomal recessive disease, due to a mutation in the gene that codifies the synthesis of the lysosomal enzyme acid β-glucosidase or glucocerebrosidase. This causes the accumulation of glucosylceramide in the lysosomes of the monocyte-macrophage system. The most frequent clinical findings are: hepatomegaly, splenomegaly, anemia, thrombocytopenia, bone pain, bone lesions. Renal agenesis (RA) is the congenital absence of one or both kidneys. **Objective.** To investigate this 27-year-old female patient, evaluated for the first time at age 17 at the Gastroenterology Center when she was referred by her obstetrician for abdominal distention and hepatomegaly during the postpartum period which was found in the physical examination, in addition to splenomegaly. **Material and methods.** Laboratory tests, liver biopsy, abdominal computed tomography, computed tomography urography and abdominal magnetic resonance imaging (MRI) were performed in this patient. **Results.** The hemoglobin, white blood cells and platelets levels were low. b-glucosidase was decreased: 1.1 μmol/L/h (normal > 3.0) and chitotriosidase increased: 1631.0 μmol/L/h (normal 1.9-74.0). In the liver biopsy, Gaucher cells were observed. She presented the genotype c.222-224 deITAC/RecF, molecularly. Abdominal computed tomography revealed increased volumen of the liver (1,985 cc) and the spleen (2,122 cc). The computed tomography urography showed absence of the right kidney. Currently, the patient continues to receive specific therapy with Imiglucerase. The hepatomegaly and splenomegaly have reverted to their normal size as reported in the MRI. The onset symptoms have disappeared and the altered laboratory values have been corrected. **Conclusion.** The finding of renal agenesis in this patient with type I Gaucher disease is casual. The patient has responded satisfactorily to the Enzyme Replacement Therapy, achieving the therapeutic goals.

10 MISCELLANEOUS

P-22
APPROACH TO THE SEARCH FOR REFERENCE VALUES OF HEPATIC ELASTICITY IN THE CUBAN POPULATION

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Background. Vibration-controlled transient elastography (VCTE) with FibroScan can be used to assess liver stiffness (LS). Different optimal liver stiffness cut-off values correspond to different stages of fibrosis in chronic liver disease. Worldwide ideal court values of LS for healthy individual shows dissimilar results. **Aims.** To establish the normal ranges of LS in the healthy Cuban sample without underlying liver disease. **Material and methods.** A cross sectional study was done in 150 plasma donors recruited from the Havana Province Blood Bank during 2016. LS measurements were performed on the same day of the laboratory analyses and abdominal ultrasound. Correlation was analyzed by Pearson correlation, the reference range was calculated using confidence interval for mean to 95%. **Results.** Of the 150 subjects, 40 were excluded, 2 were obese BMI > 30 kg/m^2, 15 had thoracic circumference < 75 cm, 7 had fatty liver on abdominal ultrasound and 16 with evidence of abnormal laboratory test. The reference range (confidence interval for mean to 95%) for the 110 subjects without known liver disease was 4.2 to 4.5 kPa, (mean 4.4, SD 0.98). There were a positive correlation observed between LS measurements and BMI ($r = 0.255$, $p < 0.01$) and serum uric acid ($r = 0.266$, $p < 0.01$). There was no correlation between age and LS measurements. LS in females was similar to males [4.3 (2.4-6.1) and 4.5 (2.2-6.3) kPa], $p = 0.086$). **Conclusions.** The normal range for LS in a sample of Cuban adults without liver disease is 4.4 (2.2-6.3) kPa. Higher values of BMI and serum uric acid level are associated with higher LS measurement.

P-62
BODY MASS INDEX AFFECTING LIVER STIFFNESS IN PEOPLE WITHOUT LIVER DISEASE

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Background. Vibration-controlled transient elastography (VCTE) with FibroScan can be used to assess liver stiffness (LS). Worldwide different optimal LS cut-off values for individual without liver disease shows different results. **Aims.** Identify the distribution of LS in Cuban adults without liver disease related to body mass index (BMI), age and sex. **Material and methods.** A cross sectional study was performed of 130 plasma donors [female 72 (55,4%), age 44,6 ± 11,8 years, BMI 24,2 ± 2,8] recruited from the Havana Province Blood Bank January 2016 through January 2017. LS measurements were performed using ECHOSENS FibroScan 404 on the same day of the laboratory analyses and abdominal ultrasound. The Pearson coefficient was used to assess correlations, and the reference range was calculated using the mean and its 95% confidence interval. **Results.** LS values observed ranged from 2.2 to 7.4 kPa, The reference range (95% CI) for the 130 subjects without known liver disease was 4.3 – 4.7 kPa (mean 4.5). A positive correlation was observed between LS measurements and serum uric acid ($r = 0.212$, $p = 0.015$), and BMI ($r = 0.241$, $p < 0.01$), maintaining the partial correlation between LS and BMI after controlling serum uric acid ($r = 0.224$, $p = 0.01$). There was no correlation between LS and age. LS in females was similar to males [4.3 (4,1-4,6) and 4.7 (4,4-4,9) kPa], $p = 0.695$. **Conclusions.** Higher values of BMI are correlated with higher LS measurement. LS detected by VCTE is influenced by BMI, even before changes in parenchymal echogenicity are observed in abdominal ultrasound.

P-67
EFFECTS OF LACK OF PUBERTAL, OVARY-DEPENDENT PROGRAMMING ON FRUCTOSE INDUCED DYSMETABOLISM

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Introduction. Bilateral ovariectomy (OVX)-induced metabolic syndrome in rats is characterized by increased body weight (BW)/fat and endocrine-metabolic dysfunctions. **Objectives.** Evaluate the effect of lacking pubertal programming by endogenous peak of ovary-derived estradiol (E2), on endocrine-metabolic and liver functions when adulthood (90 days old) was reached. **Material and methods.** Sprague-Dawley rats were either OVX on day 23/25 of life (pre-pubertal OVX; OP), day 60 of life (adult OVX; OA) or sham (S) operated. Recovered rats were allocated with free access to rat chow and water up to 69 days of age; then divided in groups either receiving drinking water (C) or fructose rich diet (F; 10% F in drinking water). Groups: CS, COP, COA, FS, FOP and FOA. Subsets of groups were sacrificed in non-fasting (basal) condition, and overnight-fasting rats were submitted to ip glucose tolerance test (GTT; 2 g/kg BW). BWs, food-intake and drank solution were recorded daily. Pasma glucose (GLU) and triglyceride (TG) levels were quantified. Glycemias were monitored throughout the GTT, individual area under the curve (AUC) of GLU levels was calculated. Finally, liver expression mRNA levels of FAS and GPAT were quantified. **Results.** Non-fasting COP and COA rats showed increased food intake, BW gain and decreased triglyceridemia, although similar glycemias. All F groups developed increased BW gain, increased TG levels (attenuated in OVX rats) however glycemia increased only in FS rats. Finally, while FS rats were intolerant to glucose overload, this effect was absent in FOP and FOA rats. A diminished gene expression of FAS was noticed in both COP and COA rats. **Conclusions.** Increased OVX-dependent BW gain seems to be related to the lack of E2 anorectic activity. This programming in lipid metabolism exerted by the lack of hormones/ovarian factors appears to protect the individual from developing dyslipidemia and pre-diabetes.

P-79
HEPATIC ELASTOGRAPHIC PATTERNS IN THE REMOTE PUERPERIO OF HEALTHY PATIENTS AND WITH HYPERTENSIVE DISORDERS IN PREGNANCY (HDP)

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Introduction. An increased risk of long-term cardiovascular and renal disease has been observed in patients with HDP. Some studies suggest also an increase risk of liver complications. **Objective.** To describe hepatic elastographic patterns in healthy puerperal an in patients with HDP. **Material and methods.** Descriptive study of pregnant women with and without history of THE who underwent hepatic elastography between day 30 and 45 after delivery. The analytical and clinical variables were collected during hospital admission. **Results.** 33 patients were included. 16 healthy and 17 with THE, one of them with HELLP syndrome (SHE) The mean age was 23.2 ± 5.3 years. The gestational age at the time of the average delivery was 37.8 ± 2.6 weeks. The mean number of deliveries was 2.12 ± 1.3. No significant differences were observed in baseline variables of healthy and HDP patients except for blood pressure. The hepatic stiffness was 3.9 ± 0.81 Kpa and 4.2 ± 1.2 Kpa in healthy and HDP patients, respectively. The highest value of the sample was 7.6 Kpa and corresponded to the only patient with HELLP syndrome. **Conclusion.** Elastographic values seem to increase in patients with HDP.

P-91
HEALTH PROFILE OF WORKERS FROM WASTE SORTING UNITS OF PORTO ALEGRE, BRAZIL

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Introduction. There is a great deficiency in studies and in the implementation of programs of prevention of work accidents in populations vulnerable to biological risks, such as garbage collectors. Still more attention is needed to the referred population regarding the manipulation of contaminated biological material. The detection of STDs by rapid tests is efficient, simple and rapid in the diagnostic screening in populations at risk and with difficulty in accessing health services. **Objective.** To describe sociodemographic, anthropometric data, food safety and prevalence of contamination by HIV, HCV, HBV and Syphilis in garbage collectors from two Waste Sorting Units. What is the health profile of waste pickers in a deprived area of the city of Porto Alegre in terms of nutritional profile, presence of food insecurity/safety, substance abuse and sexually transmitted diseases (STD)? **Material and methods.** A cross-sectional study with adults, garbage collectors, who underwent clinical and nutritional evaluation. Questionnaires were used to identify the presence of food insecurity, substance abuse and level of physical activity. In addition, rapid tests were performed for HIV, hepatitis B, hepatitis C and syphilis. **Results.** The results are found in the table 1. **Conclusion.** This population presented a high prevalence of infection/previous contact by syphilis and hepatitis C when compared to indexes in the literature. No indices of Hepatitis B infection were identified. High levels of Food Insecurity and increased risk for cardiovascular disease development were also identified. Further studies are needed with a larger number of participants from Waste Sorting Units to assess the risk and factors of occupational injury, as well as to promote health in this population.

Table 1 (P-91).

Age (years)	35.74 ± 13.40
Gender	
Women	66%
Years of study	
Less than 8 years	71%
Ethnicity	
Black	58.5%
Food Insecurity	
Food Insecurity	57.9 %
Serious Food Insecurity	16.5%
Substance Abuse Psychoactive	
Tobacco	60.5%
Alcohol	13.7%
Marijuana	14.5%
Cocaine	5.6%
BMI (kg/m²)	29.07 ± 8.35
Overweight/Obesity (less than 60 years)	52.8%
Overweight/Obesity (equal to or greater 60 years)	4.8%
Waist	
Increased cardiac risk	♀ 62.2% ♂ 22%
Physical activity	
Sedentary	67.7%

11 NAFLD

P-09
CORRELATION OF TRANSITION ELASTHOGRAPHY (FIBROSCAN®) *VS.* HISTOPATHOLOGY AND MORPHOMETRY IN LIVER BIOPSIES IN PEOPLE WITH STEATOSIS AND OBESITY

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Introduction. Not alcoholic fatty liver disease (NAFLD) is the main cause of liver chronic disease. Increasing frequency in NAFLD is directly related with the growing prevalence of metabolic syndrome. The gold standard for the diagnosis and staging of NAFLD is liver biopsy; nevertheless, it is a qualitative method not free of interpretation bias, besides of the procedure inherent risks. In order to support the histopathologic diagnosis, there have been developed quantitative digital morphometric methods. As a noninvasive method, there has been developed the transition elastography (FibroScan®). **Objective.** To analyze the correlation between the results obtained with (FibroScan®) *vs*. histopathology and digital morphometric evaluations for the NAFLD diagnosis. **Material and methods.** Observational, comparative, analytic and ambispective study. Patients at the Obesity Clinic in Hospital General de México, with liver biopsy and Fibroscan®, were included. Histologically, steatosis was diagnosed by the Pathology Service using NAFLD Score. Fibrosis percentage (FP) was quantified using Hepascan in 10 digital photographies of the analyzed biopsies. **Results.** The table shows the correlations between the three evaluated methods in 25 patients. **Conclusions.** A moderate linear correlation was found between steatosis detected by the gold standard (histopathology) when contrasting it with the Hepascan, and a mild correlation with the Fibroscan® (CAP). There was no correlation between FibroScan® and HepaScan. The histopathologic steatosis evaluation could improve it diagnosis certainty by making it more objective with methods as Hepascan. Non conflict interest statement.

Table 1 (P-09).

Contrasted variables	Correlation coefficient	P value
FibroScan *vs*. Histopathology	0.333	0.104
FibroScan *vs*. HepaScan	0.248	0.232
Histopathology *vs*. HepaScan	0.469	0.018

P-56
NON ALCOHOLIC LIVER DISEASE (NAFLD): AN EMERGING CAUSE OF CHRONIC LIVER DISEASE IN COLOMBIA

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Introduction. Liver cirrhosis is an important cause of morbidity and mortality in Latin America. The introduction of new treatments and the increase in the prevalence of metabolic syndrome in our population may be changing the epidemiological profile of patients with chronic liver disease. **Objectives.** To characterize a population of patients with cirrhosis in the city of Cartagena, Colombia. **Material and methods.** A Cross-sectional study was conducted. All patients with a diagnosis of liver cirrhosis from October 2013 to August 2017 were included. All patients underwent in a follow-up protocol that included screening of hepatocarcinoma and esophageal varices. **Results.** 346 patients were included. The mean age was 65 years (17) and 55% of the sample were women. The first and second causes of cirrhosis were cryptogenetics (35%) and NAFLD (31%), respectively. Followed by viral hepatitis (17%) and autoimmune diseases (9%). 39, 28%, 10% of the patients were in grade A, B and C of the Child-Pugh classification. 60% had history of clinical decompensation, 38% had a history of variceal hemorrhage and 4% had diagnosis of hepatocarcinoma. **Conclusion.** NAFLD is an emerging cause of chronic liver disease in Colombia.

P-58
RISK FACTORS FOR SIGNIFICANT LIVER FIBROSIS (SLF) IN NON ALCOHOLIC FATTY LIVER DISEASE (NAFLD) IN COLOMBIAN POPULATION

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Introduction. NAFLD as a cause of chronic liver disease has increased worldwide. Identified factors associated with the SLF would facilitate the design and implementation of treatment strategies to reduce the morbidity associated with this condition. **Objectives.** To identify risk factors associated with SLF in patients with NAFLD. **Material and methods.** A cross-sectional, retrospective study was conducted. All NAFLD patients diagnosed by ultrasound from October to December-2018 were included. Other causes chronic liver disease were rule out, a fibroscan was performed and clinical and analytical data were collected from the clinical chart. An elastography ≥ 7.5 Kpa was indicative of significant liver fibrosis. **Results.** Finally 62 patients were available for analysis (men 62%). The mean age was 55 years (7.5). The prevalence of hypertension, carbohydrate metabolism disorders, hypertriglyceridemia, hypercholesterolemia, hypothyroidism and chronic renal failure was 32%, 42%, 48%, 58%, 11% and 2%, respectively. History of hypertension ($p = 0.008$) and hypothyroidism ($p = 0.001$) were independent predictors of SLF. **Conclusion.** A history of hypothyroidism and hypertension could improve the identification of patients with NAFLD at risk of progression.

P-68
USEFULNESS OF SWANSEA CRITERIA IN CRITICAL CARE FOR THE DIAGNOSIS OF ACUTE FATTY LIVER OF PREGNANCY (AFLP). A RETROSPECTIVE COHORT STUDY

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Introduction. Acute fatty liver of pregnancy (AFLP) is a rare and complex condition observed during the third trimester of pregnancy. This disease is considered as a preeclampsia imitator. Liver biopsy is usually the gold standard for diagnosis; however, this is often difficult due to the high risk of bleeding. In 2002, some variables were proposed (14 in total) to perform the diagnosis of AFLP, known as Swansea criteria. According to this model, the presence of six or more criteria define this disease. **Objective.** To evaluate the clinical performance of Swansea diagnostic criteria to identify AFLP in critically ill obstetric patients admitted to Intensive Care Unit (ICU). **Material and methods.** Retrospective single center cohort study in Cartagena, Colombia. From January 2006 to December 2011. We included all obstetric patients admitted to ICU with diagnoses of hypertensive disorders of pregnancy. Then, we applied the Swansea criteria and those with six or more criteria were classified as AFLP. **Results.** During the study period, seven hundred twenty-four (724) obstetric patients were admitted to the ICU. Of these, 334 pregnant women (46.1%) had a diagnosis of hypertensive disorders of pregnancy. Twelve patients (3.7%) met the Swansea criteria ≥ 6 criteria and were defined as AFLP. The average gestational age was 34.9 ± 3.9 weeks in AFLP group. In relation to the Swansea criteria, 3/12 presented vomiting, 6/12 Abdominal pain, 1/12 Polydipsia/polyuria, encephalopathy 7/12, 10/12 elevated bilirubin, 12/12 impaired liver enzymes, 10/12 leukocytosis and 11/12 creatinine alteration. No data on glucose, uric acid and ammonium levels were obtained. Not surprisingly, none of the patients underwent a liver biopsy. **Conclusion.** Our results show that the Swansea criteria allow us to identify patients with suspected AFLP, a pathology with a

considerable higher morbidity and mortality compared with preeclampsia in critical care settings. **Conflict of interest.** None.

P-72
PREVALENCE OF FIBROSIS AND STEATOSIS IN DIABETES MELLITUS TYPE 2 (DM2) PATIENTS AT THE MEXICO GENERAL HOSPITAL

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Background. Patients with DM2 are at risk of Non-Alcoholic Fatty Liver Disease (NAFLD), but there is no report about the incidence through transient ultrasound elastography (TUE, Fibroscan®) in Mexico. **Aim.** Determinate the prevalence of NAFLD in DM2 patients referred to TUE. **Material and methods.** Retrospectively analyzed 66 reports of DM2 patients [11.2%, 54.62 ± 11.91 years, 83.33% females] of 587 TUEs performed from February 2017 to April 2018. All patient's TUEs were realized accordingly to standardized methods. Fibrosis was evaluated by kPa (F0:0-5.9, F1:6.0-7.0, F2:7.1-8.0, F2-F3:8.0-8.7, F3:8.8-10.2, F3-F4:10.3-11.7, F4: > 11.7) and steatosis by Db/m [S0: < 100, S1:100-200, S2:201-300, S3:301-400). We also evaluated indications, body mass index, standard laboratories, time of diagnosis of DM2, glycosylated hemoglobin, fasting blood glucose (FBG) and NAFLD score. Data express mean±SD, 95% confidence interval and percentages. Student t test, 2 tails with alpha = 0.05. **Results.** All patients had steatosis (S1 = 27.27%, S2 = 43.94%, S3 = 28.79%). Forty-nine (74.24%) had fibrosis (F1 = 6.06%, F2 = 4.55%, F2-3 = 3.03%, F3 = 3.03%, F3-F4 = 4.55%, F4 = 53.03%). Indications for TUE were: NAFLD (65%), obesity (11%), alterations in liver function test (6%), thrombocytopenia (6%), cirrhosis (5%), gastrointestinal bleeding (3%) and others (6%). There were differences on HbA1c, selected laboratories, and NAFLD score (Table 1). **Conclusion.** Results show for the first time the evaluation of Mexican patients with DM2 undergoing TUE. All patients had some degree of steatosis, 75% had fibrosis. NAFLD suspicion was the main indications for TUE in more than a half of patients. Patients showed impaired hepatic function evidenced by lower values of HbA1c, selected laboratories and NAFLD score. These findings alert to the need to screening of DM2 patients to submit for an early diagnosis of NAFLD.

P-73
DIAGNOSTIC ACCURACY OF HEPATIC TRANSIENT ELASTOGRAPHY (FIBROSCAN®) AND CONTROLLED ATTENUATION PARAMETER (CAP™) IN NAFLD PATIENTS

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Introduction. Fibroscan® and CAP™ are noninvasive tools for the diagnosis of fibrosis and steatosis respectively in hepatic diseases. **Objectives.** The aim of this study was to evaluate the diagnostic accuracy of Fibroscan® and CAP™ in Non Alcoholic Fatty Liver Disease (NAFLD) patients. **Material and methods.** We enrolled 65 patients with NAFLD diagnosed by liver biopsy at Sao Paulo University Hospital. 71% were female and 29% were male with mean age of 56 years old. Mean body mass index (BMI) and abdominal circumference were 31.29 kg/m^2 (19.6-47.7 kg/m^2) and 102.3 cm (77-135 cm), respectively. They underwent liver stiffness measurements (LSM) to assess fibrosis by Fibroscan® using median and extra large probes.

Table 1 (P-72).

	Fibrosis + (n = 49)	Fibrosis – (n = 17)	P value
Body mass index (BMI)	33.35 ± 7.23	30.42 ± 7.37	0.1558
Months of diagnosis	95.63 ± 84.14	115.82 ± 100.87	0.4213
Glycosylated hemoglobin (HbA1c)	7.18 ± 1.63	8.24 ± 2.4	0.1231
Fasting blood glucose (FBG)	152.78 ± 54.36	173.59 ± 68.02	0.2076
Alanine transaminase (ALT)	48.31 ± 29.75	51.29 ± 56.17	0.7815
Aspartate amirotransferase (AST)	54.31 ± 39.1	35.29 ± 23.04	0.0635
AST/ALT relation	1.23 ± 0.55	0.96 ± 0.36	0.0646
Albumin (Alb)	3.54 ± 0.55	3.95 ± 0.29	0.0048
Gamma-glutamyl transferase (GGT)	96.63 ± 117.09	38.06 ± 27.12	0.0461
Alkaline phosphatase (AP)	127.1 ± 60.78	109.71 ± 41.65	0.2790
Total bilirubin (TB)	1.15 ± 0.66	0.71 ± 0.42	0.0124
Indirect bilirubin (IB)	0.87 ± 0.47	0.59 ± 0.4	0.0326
Direct bilirubin (DB)	0.28 ± 0.29	0.12 ± 0.04	0.0233
Platelets (PLT)	148.59 ± 90.89	245.35 ± 71.84	0.0002
Total cholesterol (TC)	164.76 ± 42.78	198.65 ± 31.51	0.0039
Triglycerides (TG)	151.02 ± 77.94	208.76 ± 52.66	0.0062
LDL-Cholesterol (LDL-C)	93.58 ± 28.35	120.35 ± 33.9	0.0022
HDL-Cholesterol (HDL-C)	39.24 ± 13.55	40.12 ± 8.23	0.8039
Urea (U)	29.84 ± 20.5	29.01 ± 14.94	0.8775
Creatinine (Cr)	0.75 ± 0.28	0-77 ± 0.27	0.7916
NAFLD (score)	1.55 ± 1.69	-0.49 ± 1.47	0.0000

CAP™ was used to assess steatosis when Fibroscan® measures were made with median probe. Time frame between liver biopsy and Fibroscan® with or without CAP™ was of 60 days at most. The accuracy of these noninvasive tools versus liver histology (Kleiner score) was evaluated using Obuchowski measures. And analysis of variance (ANOVA) was used to analyse statistical difference between the results of the different fibrosis stages and grades of steatosis measured by Fibroscan® and CAP™, respectively. **Results.** Obuchowski measures for Fibroscan® were: F0 *vs*, F2 (0.528); F0 *vs*. F3 (0.741); F0 *vs*. F4 (1.00); F1 *vs*. F2 (0.61); F1 *vs*. F3 (0.789); F1 *vs*. F4 (1.00); F2 *vs*. F3 (0.722); F2 *vs*. F4 (1.00); F3 *vs*. F4 (0.926). Obuchowski measures for CAP™ were: S1 *vs*. S2 (0.733); S1 *vs*. S3 (0.801); S2 *vs*. S3 (0.513). ANOVA for Fibroscan® had a overall statistically significant p. value of 0.01 and between F4 and F0; F4 and F2 and F4 and F3 p. values of 0.00; 0.00 and 0.49 respectively. **Conclusions.** Fibroscan® had better accuracy in detecting advanced fibrosis(F3) and differentiating the extremities of fibrosis stages (F0/F1/F2 *vs*. F3/F4) whereas was unsatisfactory in differentiating intermediate fibrosis stages. CAP™ had poor accuracy results, with best results concerning differentiation between S1 and S3.

P-119
PREVALENCE AND RISK FACTORS FOR BIOPSY-PROVEN NAFLD-NASH IN ADULT PATIENTS WITH GALLSTONES

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Introduction. The relationship between gallstones and non-alcoholic fatty liver disease (NAFLD) has not been well established, therefore remains uncertain. **Aim.** to determine the prevalence and risk factors for biopsy-proven NAFLD among patients with gallstones. **Materials and methods.** Cross-sectional prospective study. Anthropometric, laboratory evaluation, abdominal ultrasound and liver biopsy were performed to 30 consecutive patients with gallstones referred to the outpatient clinic of the Zuliana Foundation of Liver or the Central Hospital from November 2015 to May 2016. Kruskal-Wallis was used to measure the degree of association. **Results.** 83.3% were female gender, average age 49.5 years, 66.6% had a HOMA > 2.5. The prevalence of simple steatosis was 40%, 16% (5 patients) had histological features of steatohepatitis, and cirrhosis 3.3%. There is an association between features, biochemical, ultrasonographic and histological with a significance level equal to 0.000 ($p < 0.05$). **Conclusions.** Intermediate prevalence of NAFLD among patients with gallstones is 56.7%, more frequent in those patients with concurrent metabolic syndrome with an evident association between both entities. The combination of an increased HOMA score with fatty liver on ultrasound has a good accuracy for predicting NAFLD in patients with gallstones. Few studies have analyzed and described this association, which must be considered as an important factor in all patients with Gallstones appearance.

P-141
TRANSIET ELASTOGRAPHY (FIBROSCAN®) COMPARED WITH LIVER BIOPSY AND MORPHOMETRY (HEPASCAN) FOR THE DIAGNOSIS OF FIBROSIS IN OBESE PATIENTS

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Introduction. The prevalence of obesity-related non-alcoholic fatty liver disease (NAFLD) is rising. NAFLD may result in non-alcoholic steatohepatitis (NASH), progressing to liver cirrosis, liver biopsy remains the gold standard for the diagnosis of liver fibrosis and steatosis, but it's qualitative methods, is not exempt from biases in the interpretation. Noninvasive method es Fibroscan there is the possibility of overtimating hepatic stiffness results in patients with obesity To help the histopathological diagnosis they have been developed digital image analysis (morphometry) allows quantitative HepaScan. **Aim.** To establish the degree of correlation between the diagnosis of hepatic fibrosis using FibroScan using the XL probe with respect to histopathology and morphometry. **Material and methods.** observational, comparative, analytic, ambispective study. We evaluated patients han been referred for fibroscan to the Departament of Gastroenterology and liver biopsy for departament Obesity Clinic to the Hospital General de Mexico and Pathology departamento analyze liver biopsy whith Metavir score. **Results.** A total 25 biopsies were evaluated for fibrosis, qualitatively by score Metavir and quantitatively by fibrosis area fraction (HepaScan), was correlated using spearman (Table 1). Fibroscan *vs*. Histopathology correlation 0.079 p = 0.708, Fibroscan *vs*. HepaScan -.115 p = 0.585, Histopathology *vs*. HepaScan correlation 0.51, p = 0.810. **Conclusion.** There was no linear correlation between the fibrosis detected by the gold standard (histopathology) when compared with the parameters of FibroScan® (Kpa) and HepaScan, as well as between them. There are limitations in the present study due to the small number of biopsies and only one group of patients was analyzed. No conflicts of interest.

Table 1 (P-141).

Variables	Correlation coefficient	p
FibroScan vs Histopathology	0.079	0.708
FibroScan vs HepaScan	-0.115	0.585
Histopathology *vs*. HepaScan	0.051	0.810

12 NASH

P-30
NON-INVASIVE BIOMARKERS TO MONITORING LIVER DISEASE PROGRESSION IN NASH PATIENTS

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Introduction. Genetic and epigenetic modifications have been implicated in NAFLD progression. Identify biomarkers to detect and monitoring disease progression is the "goal". miRNAs are stable in body fluids and the levels of some miRNAs are altered under certain pathophysiological conditions. Our aim was identified non-invasive biomarkers in NASH progression until HCC/NASH. **Material and methods.** Initially, 15 well characterized biopsy-proven NASH patients in all stages (F0-1; F3-4; NASH/HCC) and 5 NAFL patients were evaluated. Global serum miRNA profiling was tested to 84 miRNAs expression using Liver miFinder miRNA PCR Array (QIAGEN) in these patients. After the first analysis by miRNA profiling miR-122-5p, which has a liver specific expression, was independently validated using serum sample from 88 patients with NASH. Also, the SNP PNPLA3 (rs738409) which is associated with NAFLD was evaluated. Relative quantitation was used and the levels of miRNA were normalized against the reference (cel-miR-39) by 2^{-ddCt}. **Results.** Expression array analysis of 20 serum samples revealed that miRNAs were differentially expressed between NAFL and NASH patients (miR-29a-3p, miR-122-5p, miR-155-5p, miR-192-5p, miR-375, miR-451a and 1260a). NASH/

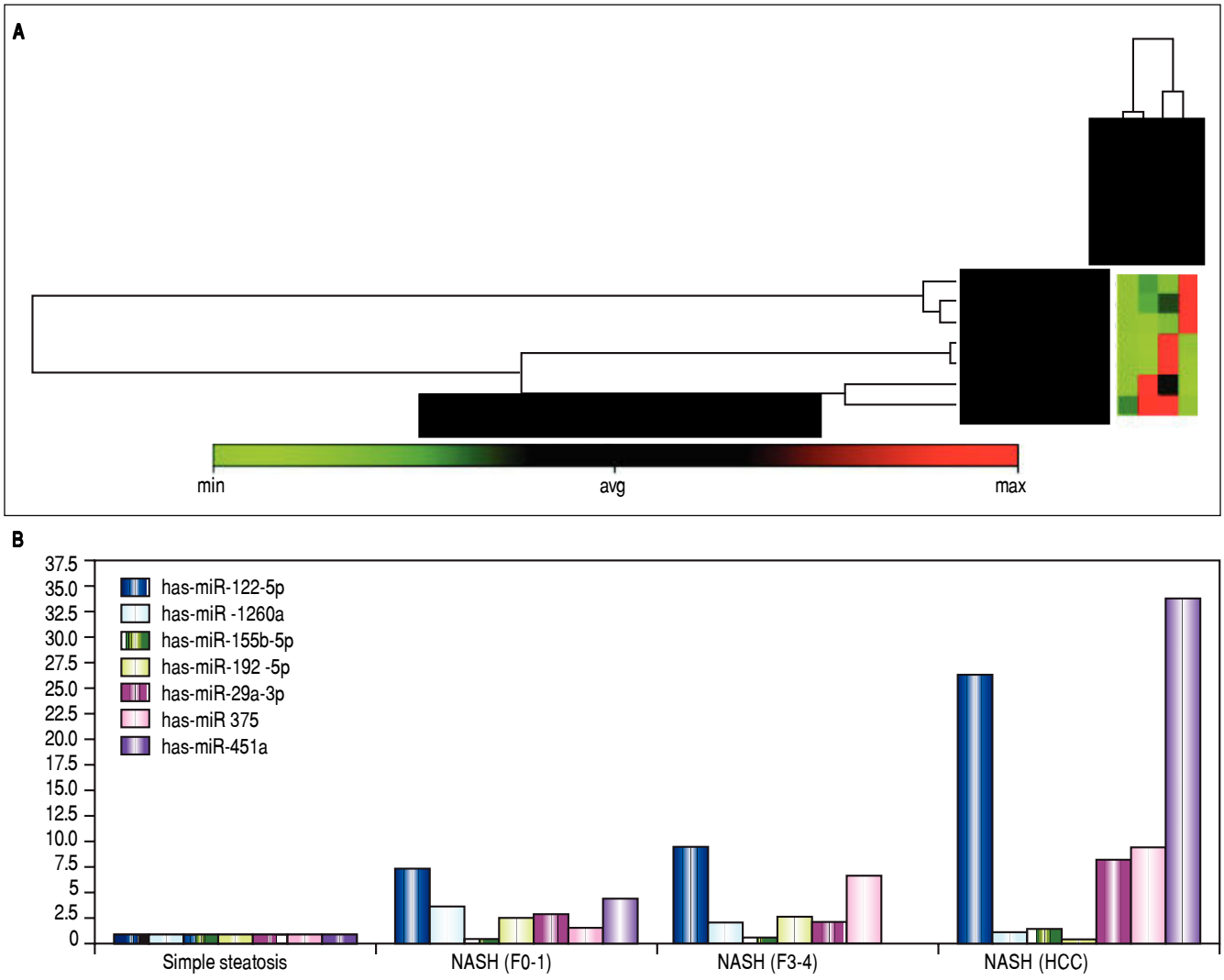

Figure 1 (P-30). *miRNA differentially expressed in non-alcoholic fatty liver disease patients compared with simple steatosis. Red, overexpresse miRNAs; green, dowregulated miRNA.*

HCC patients presented higher levels of miR-451a, miR-375, miR-122-5p and miR-29a-3p. Additionally, miR-122-5p, miR-29a-3p, miR-375 and miR-451a expression was increasing according to liver fibrosis progression. Patients with CG + GG PNPLA3 genotype presented higher serum level of miR-122-5p compared to CC patients. miR-122 and PNPLA3 allele G are associated with liver progression. **Conclusion.** Circulating miR-122-5p expression associated with PNPLA3 genotyping could be used as a non-invasive biomarker of liver progression in NASH patients. NASH/HCC patients presented higher levels of circulating miR-375, miR-122-5p and miR-451a compared to other patients suggesting that these miRNAs were modulated during transition from NASH to HCC.

P-133
STRONG ASSOCIATION BETWEEN NON-ALCOHOLIC STEATOHEPATITIS AND DIABETES MELLITUS IN MEXICAN POPULATION

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Background. Non-alcoholic fatty liver disease (NAFLD) is the most common chronic liver disease in Mexico. The prevalence of NAFLD is around 30% approximately. NAFLD and its aggressive form non-alcoholic steatohepatitis (NASH) have become a serious problem to our country because of the high prevalence of obesity, metabolic syndrome and type 2 diabetes mellitus (T2DM). Mexico has the highest prevalence of T2DM (14%) in the world. Nowadays, there is no consistent evidence for predictors of liver fibrosis progression in NASH. Therefore, we sought to investigate the most important risk factors in Mexican population for fibrosis progression in NASH. **Material and methods.** We performed a cross-sectional cohort study in different geographic areas of Mexico. The inclusion criteria required documentation of liver biopsy that meets the histological diagnostic criteria for NASH as well as documentation of liver fibrosis. Our sample was divided in 2 groups: with significant hepatic fibrosis (n = 34) and with non-significant hepatic fibrosis (n = 62). Data were obtained during a 5-year period (Jan 2012 - Dec 2017). Descriptive statistics and 95% confidence intervals were used for the patients' characteristics. Quantitative variables were analyzed using the Student's *t* test or the Wilcoxon rank-sum Mann-Whitney test, according to distribution. **Results.** A total of 96 patients were enrolled (30.2% men and 69.8% women). Mean age was 52.7 ± 12.2. T2DM and high blood pressure were the most significant factors associated with progression of liver fibrosis in the group with fibrosis stages F2, F3 or F4. We have summarized the main results in the table 1. **Conclusions.** Metabolic abnormalities were the most important predictive factors for the severity of liver fibrosis in Mexico, being T2DM the main risk metabolic factor for fibrosis progression. Our results suggested that is mandatory to develop screening programs for patients with metabolic disorders in order to prevent and to decrease the progression of NASH.

P-178
HIGH PREVALENCE OF NASH AND ADVANCED LIVER FIBROSIS IN TYPE II DIABETICS FOLLOWED BY ENDOCRINOLOGY

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Background. It is estimated that 75-100 million adults in the United States have nonalcoholic fatty liver disease (NAFLD). The histological spectrum of NAFLD ranges from steatosis without hepatocellular injury, nonalcoholic fatty liver (NAFL), to lobular inflammation with hepatocellular ballooning injury, nonalcoholic steatohepatitis (NASH). NASH is associated with development of liver fibrosis, progression to cirrhosis and/or the development of hepatocellular carcinoma (HCC). Several studies have shown that type II diabetes mellitus (T2DM) is a risk factor for developing NASH and moderate-severe fibrosis;

Table 1 (P-133). Risk factors associated with the progression of liver fibrosis in NASH patients.

	Non-significant liver fibrosis (F0-F1) n = 62	Significant liver fibrosis (F2-F4) n = 34	Odds Ratio (CI 95%)	P-Value
Age, y, mean (SD)	51 (12.5)	55 (11.3)		
Male gender, n (%)	21 (33.8)	8 (23.5)		
Diabetes mellitus, n (%)	27 (43.5)	27 (79.4)	5.0 (1.9-13.2)	P < 0.01
High blood pressure, n (%)	17 (27.4)	17 (50)	3.4 (1.4-8.1)	P < 0.01
Platelet count, mean (SD)	234 (210.6)	152 (121.7)	0.98 (0.98-0.99)	P < 0.01
Triglycerides (mg/dL), median (min-max)	170 (84-445)	126 (43-315)	0.99 (0.98-0.99)	P < 0.05
Glucose (mg/dL) median (min-max)	112 (76-336)	148 (79-297)	0.1 (0.99-1.01)	p:0.06
Body mass index (kg/m^2) median (min-max)	28 (20.7-48.5)	31 (21.1-51.2)	1.09 (1.01-1.17)	P < 0.05

however, few patients with T2DM are ever diagnosed or counseled regarding treatment and management of NASH. **Material and methods.** 998 patients with an ICD-9 diagnosis of diabetes mellitus (DM) or prediabetes seen at an endocrinology practice in Phoenix AZ, between September 2008 - November 2016 were retrospectively identified and eligible for data analysis. A patient was defined as having probable NASH if they: had an elevated ALT or AST (male > 30 IU/L, female > 19 IU/L), had T2DM or prediabetes, no other diagnosed cause of liver disease and no recent alcohol abuse (in past 12 months). Metabolic syndrome was defined as meeting 3 of 5 modified criteria from the American Heart Association: T2DM, hypertension, BMI ≥ 30 kg/m^2, triglycerides > 150 mg/dL and HDL < 40 mg/dL (males), < 50 mg/dL (females). Liver fibrosis was estimated using the AST to Platelet Ratio Index (APRI), Fibrosis-4 Index (FIB-4), and the NAFLD Fibrosis Score (NFS). T-tests were used to compare continuous variables and χ^2 analysis to compare categorical variables. **Results.** In this population of patients with T2DM, 55.6% (n = 555) met the criteria for probable NASH. Patients with NASH were more likely to be obese (p = 0.033), have metabolic syndrome (p = 0.009), hypertension (p = 0.036), smoke (p = 0.036) and to take statin (0.040). In addition, patients with NASH had higher levels of ALT (p ≤ 0.0001); AST (p ≤ 0.0001), triglycerides (p = 0.011), VLDL (p = 0.025) and lower levels of platelets (p = 0.041). Interestingly, there was no statistically significant difference in the prevalence of NASH in Hispanics as compared to non-Hispanics patients (p = 0.217) or in males as compared to females (p = 0.322). However, Hispanic patients with NASH were younger (p = 0.014) and had higher level of total cholesterol (p = 0.029) than NASH patients of other races. 23% of patients with NASH had advanced fibrosis by NFS (Metavir F3-F4). Risk factors for advanced fibrosis *vs.* early fibrosis (Metavir F1-F2) were older age (p = 0.001), being obese or overweight (p ≤ 0.0001), concomitant metabolic syndrome (p ≤ 0.0001), hypertension (p = 0.0003), insulin use (p = 0.0459) and lower cholesterol and LDL levels (p = 0.002 and p = 0.001 respectively). **Conclusions.** NASH and advanced fibrosis is common among T2DM patients who are being followed by endocrinology. Select biomarkers however give varying results, likely due to the low sensitivity. More steps must be taken to increase the recognition of NASH in high-risk populations utilize non-invasive staging mechanisms to begin evaluating and managing, particularly those with advanced fibrosis.

13 NEOPLASIA

P-159
CLINICAL CASE HEPATIC CYSTIC INJURIES - BILIARY CYSTODENOMA

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Introduction. Most cystic lesions of the liver are discovered as incidental findings by imaging techniques. Hepatobiliary cystadenoma is a rare cystic neoplasm with a prevalence of 5%. Its clinical relevance is related to the presence of pre-malignant lesions with a transformation rate as high as 20-30%. It has been hypothetized that these lesions originate in the biliary epithelium, possibly from a congenitally aberrant duct, among others. Currently, its diagnosis is mainly based on imaging studies, although surgery is the most accurate method for definitive diagnostic. Aspiration cytology and needle biopsy are not generally recommended due to the risk of dissemination of tumor cells in case of malignancy. The main differential diagnostics are: Simple Hepatic Hydatid Cysts, Caroli's disease, hepatocellular carcinoma, and biliary cystadenocarcinoma. Radical surgery remains as the treatment of choice to prevent recurrence or the potential for malignant transformation. The objective of presenting this clinical case is to discuss the usefulness of diagnostic techniques and the management of this type of tumors. **Case report.** A 34-year-old female patient with a six month clinical picture characterized by pain in the right hypochondrium plus an abdominal distension. At the physical examination, hepatomegaly was palpated 10 cm. below the rib flange. Laboratory analyses showed blood count, bilirubins and transaminases within refer-

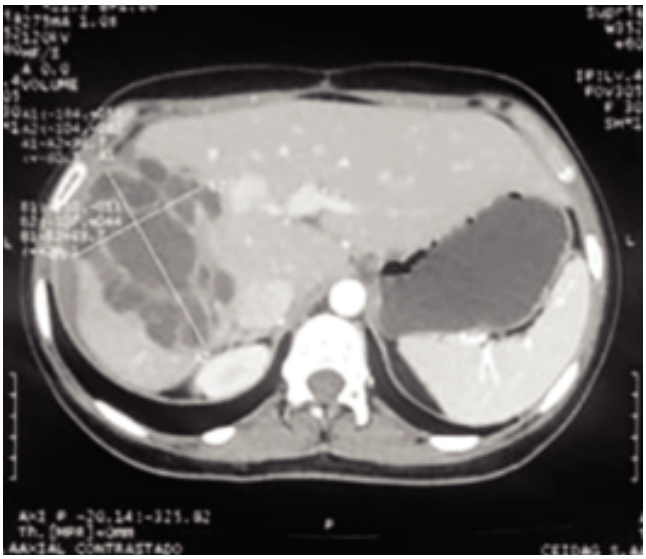

Figure 1 (P-159). *Abdominal resonance showing hepatic cystic lesion.*

ence parameters. Tomography and abdominal resonance were performed and showed hepatic cystic lesion in the right lobe, measuring 22.4 x 14.3 cm in diameter (Figure 1). Serology, for *Echinococcus granulosus* negative, was requested. Subsequently, due to the lack of diagnostic accuracy, the patient was operated surgically by laparotomy plus resection of the cyst. Histopathological diagnosis: Hepatobiliary cystadenoma.

14 TRANSPLANT

P-02
POST-TRANSPLANT LYMPHOPROLIFERATIVE DISORDERS IN A COHORT OF ADULT PATIENTS WITH LIVER TRANSPLANTATION IN BOGOTÁ, COLOMBIA

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Introduction. Post-transplant lymphoproliferative disorders are characterized by uncontrolled lymphocyte proliferation as a consequence of immunosuppression administered after liver transplantation. Its incidence is relatively low, however, they generate a bad prognosis in the patient because is a life - threatening complication. **Objective.** The present work is characterizing clinically and pathologically the cases of PTLD in a cohort of adult patients with liver transplant treated during a period of 15 years in the University Hospital Fundación Santa Fe de Bogotá. **Material and methods.** This was a retrospective observational study, where we reviewed the databases of the Hepatic Transplant Unit and the Department of Pathology and Laboratories of the PTLD cases that were diagnosed during the study period, epidemiological, clinical and pathological and statistical analysis was advanced. **Results.** During the study period there were 572 patients with liver transplantation, the incidence of lymphoproliferative disorders was 2.44%, 79% were men and the average age at diagnosis was 62.5 years. 71% of the cases occurred during the first 12 months after transplantation and the same percentage were seropositive for EBV. The most frequent pathological phenotype was monomorphic and most of the tumors were identified in the hepatic hilum. Survival rate at 1 year was 50%. The characteristics of the patients were similar to those described in other continents, although the high percentage of cases of early presentation attracted attention. Deeper investigations must be carried out in order to achieve a better understanding of this pathology in the country. **Conclusion.** The present corresponds to the first clinical pathological analysis of PTLD in patients with advanced liver transplantation in Colombia at the date. The rate of Post-transplant lymphoproliferative disorder was similar to other series published, with same strategies in management (reduction in immunosupresive therapy and rituximab).

Table 1 (P-02). General characteristics of patients, background and form of presentation.

Variable	n = 14 n (%)
Gender	
Male	11 (78.57)
Female	3
Mean age at diagnosis (years)	62.5 (Range 55 - 67)
PTLD	
Early onset (< 12 month)	10 (71.42)
Late onset (> 12 month)	4 (28.57)
Primary Hepatic disease	
Alcoholic cirrhosis	4 (28.57)
Non-alcoholic steatohepatitis	3 (21.43)
Primary biliary cirrhosis	2 (14.29)
Hepatitis C and hepatocellular carcinoma	2 (14.29)
Hepatitis C	1 (7.14)
Overlap syndrome	1 (7.14)
Iron overload	1 (7.14)
Immunosupressive therapy	
Cyclosporine	10 (71.43)
Tacrolimus	3 (2.43)
Mycophenolate	12 (85.71)
Sirolimus	1 (7.14)
Immunosupresive drugs at diagnosis (n)	
1	2 (14.29)
2	12 (85.71)
Acute rejection episode	
1 episode	5 (35.7)
Main presentation	
Abnormal liver blood test	8 (57.14)
Abdominal pain	3 (21.43)
Fever	2 (14.29)
Jaundice	1 (7.14)
Asymptomatic	1 (7.14)
Treatment employed	
Rituximab	13 (92.8)
Reduction immunosupressive therapy	14 (100)
Risk factors identified and frequency	
Acute rejection episode	5 (35.71)
Virological breakthrough hepatitis C	3 (21.43)
Epstein Barr Virological status in donor	
Positive	6 (42.86)
Negative	5 (35.71)
No data	3 (21.43)
Epstein Barr Virological status in receptor	
Positive	10 (71.43)
Negative	1 (7.14)
No data	3 (21.43)

P-03
TIME TO TRANSPLANTATION AS PREDICTOR OF HEPATOCELLULAR RECURRENCE AFTER LIVER TRANSPLANTATION: A RETROSPECTIVE COHORT STUDY

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Hepatocellular recurrence after liver transplantation (LTx) is a major cause of morbidity and mortality. We aimed to investigate the association between waiting time and hepatocellular carcinoma (HCC) recurrence in patients undergoing LTx for HCC. We studied 250 patients who underwent LTx between 2007-2015. Survival and recurrence curves were calculated according to the Kaplan - Meier method and compared by the log-rank test. Univariate hazard ratios for predictors of post-LTx HCC recurrence were determined by Cox proportional hazards regressions. There were no significant differences in recurrence rates when stratified by wait time to transplant. There were also no significant differences in rates of recurrence when the short (< 165 days) and long (> 335 days) wait-time groups were combined, although in this pooled group the 1-year and 5-year cumulative likelihoods of HCC recurrence were higher than in the group with a wait time of 165-334 days. Other predictors of recurrence were microvascular invasion, explant beyond Milan Brazil criteria and tumor diameter ≥ 2.6. This study found no association between wait time to transplantation and recurrence rates in patients who received LTx for HCC and confirmed that variables associated with tumor biology are associated with HCC recurrence. Authorship. Santiago Rodriguez conceptualized and designed the data, collected the data, analyzed and interpreted the data, drafted the article, and critically revised the article. Lucas Ernani collected the data and critically revised the article. Guillermo Kiss collected the data and critically revised the article. Alfeu de Medeiros Fleck Jr. collected the data and critically revised the article. Claudio Augusto Marroni collected the data and critically revised the article. Ajacio Bandeira de Mello Brandão conceptualized and designed the data, analyzed and interpreted the data, drafted the article, and critically revised the article. **Financial disclosure.** The authors have no financial relationships relevant to this article to disclose. Santiago Rodriguez is a CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior) scholarship recipient. **Conflict of interest.** The authors have no conflicts of interest to disclose.

P-06
PRE-TRANSPLANT SERUM CREATININE AS A PREDICTOR OF THE DEVELOPMENT OF CHRONIC KIDNEY DISEASE AT ONE YEAR AFTER LIVER TRANSPLANTATION IN PATIENTS WITH A NEPHROPROTECTIVE IMMUNOSUPPRESSION

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Introduction. Chronic kidney disease after liver transplantation is related to calcineurin inhibitors (CNI). Despite the nephroprotective strategies some LT recipients develop CKD. We evaluated the incidence and the peritrasplant risk factors of CKD at 1-year after LT in cirrhotic recipients following a CNI-sparing protocol. **Material and method.** 407 LT patients due to cirrhosis were evaluated. CKD was defined as GFR < 60 mL / min / 1.73 m^2 for > 3 months. Recipients with CKD at transplant were excluded (n = 51). Among recipients without CKD at transplant (n = 357), one third (n = 117) underwent a CNI-sparing protocol (basiliximab plus mycophenolate plus steroids plus delayed (5th day) and low-dose CNI. The predictors of CKD at 1-year after LT were assessed by logistic regression. **Results.** Study cohort consisted of 117 LT recipients. 80% recipients were male, median age was 56 (48-61) and 43% had a positive HCV serology. Ninety-three (75%) recipients received tacrolimus. The median serum creatinine at transplant was 0.92 mg/dL (0.77-1-16). The incidence of CKD at 1-year after LT was 24%. Serum creatinine at transplant was the only predictor of CKD at 1-year after LT [OR = 18.5 (4.1-81), p = 0.000), AUROC 0.785]. The incidence of CKD at 1-year after LT was 5% in recipients with serum creatinine at transplant ≤ 0.9 mg/dL compared to 40% in those with serum creatinine at transplant > 0.9 mg/dL (p = 0.000). CNI trough levels were comparable between patients with or without CKD at 1-year after LT. No differences were observed in the incidence of rejection between patients with or without CKD at 1-year after LT (11% *vs.* 13% respectively, p = 0.885). **Conclusion.** A significant proportion of LT recipients due to cirrhosis without CKD at transplant develop CKD one-year after LT despite using a CNI-sparing protocol, especially those with a serum creatinine > 0.9 mg/dL at transplant. Serum creatinine at transplant is an independent predictor of CKD at 1-year after LT.

P-08
FACTORS ASSOCIATED WITH IMMUNOSUPPRESSION FREE OF CALCINEURIN INHIBITORS IN LIVER TRANSPLANT RECIPIENTS

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Background. Calcineurin inhibitors (CNIs) are associated with important morbidity and mortality in liver transplant (LT) recipients. Several strategies to reduce their side effects have been proposed, including its withdrawal. Results of this strategy are

under-reported. **Objectives.** identify factors associated with CNIs withdrawal and evaluate the impact over kidney function and graft rejection. **Material and methods.** Retrospective case-control study. We included 1013 LT recipients from 2000 to 2015 at Hospital Clínic de Barcelona and identified recipients under CNIs-free regimen (case group) and those under CNIs-based regimen (control group), paired 1:1 according to LT year. **Results.** In 207 (20%) LT recipients, CNI was discontinued. Median time between LT-CNIs withdrawal was 52 (18-93) months. At LT, case group were older 57 (49-63) *vs.* 55 (48-61) years, p = 0.011 and had lower estimated glomerular filtration rate (GFRe) with 79 (± 32) *vs.* 91 (± 32) mL / min / 1.73 m^2, p ≤ 0.001. With respect to the underlying liver disease, hepatitis C virus was more frequent in case group, 61 *vs.* 88%, p ≤ 0.001 and lower of autoimmune etiology, 3 *vs.* 10%, p = 0.005. Kidney failure was the main indication for CNIs withdrawal (55%). At CNIs discontinuation, GFRe increased to the third month, from 47 (35-66) to 56 (43 -73) mL / min / 1.73 m^2, p ≤ 0.001, which was also observed in the subgroup of withdrawal by renal indication, from 39 (32 - 48) to 47 (37 - 58) mL / min / 1.73 m^2, p ≤ 0.001. 12 episodes of rejection were reported, 8 of them (67%) in recipients with LT-withdrawal CNIs < 12 months. **Conclusion.** In 20% LT recipients, CNIs are suspended mainly as a result of adverse effects. Factors associated with the withdrawal are increased age at LT and impaired renal function. At the CNIs removal, improvement in renal function was observed. Episodes of rejection are rare, mainly If > 12 months have elapsed post LT.

P-28
LIVER TRANSPLANTATION IN ADULTS WITH ACUTE LIVER FAILURE: OUTCOMES FROM THE ARGENTINEAN TRANSPLANT REGISTRY

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Introduction. Liver transplantation (LT) for acute liver failure (ALF) still has a high early mortality. **Aims.** To evaluate changes occurred in recent years and identified risk factors for poor outcomes. **Material and methods.** Data were obtained from the Argentinean Transplant Registry. Etiologies and outcomes were evaluated and stratified into two time periods (1998-2005 and 2006-2016). **Results.** A total of 561 patients listed for LT were evaluated. Etiologies of ALF were only available in the later period (n = 363) and were indeterminate (28%), autoimmune hepatitis (25%), viral hepatitis B (18%) and drug-induced not acetaminophen (15%). Overall, 61% of the patients underwent LT and 22% died on the waiting list. However, between the early and later periods there was a reduction in waitlist mortality from 27% to 19% (p < 0.02). One month post-LT survival rates improved between the two periods (70% *vs.* 82%, p = 0.01). MELD score at the time of transplant presented an AUROC 0.76 (95%CI 0.67-0.83) to predict death when comparing spontaneous survivors with those who died without LT. Multivariate cox regression analysis identified prolonged cold ischemia time (HR 1.18, 95%CI 1.02-1.36; p = 0.02) and serum creatinine (HR 1.31, 95%CI 1.01-1.71; p = 0.04) as independent risk factors of death post-LT. **Conclusions**. In the last years, survival of patients with ALF on the waiting list and after LT has significantly improved. Prolonged cold ischemia time and creatinine were independently associated with worse outcomes following LT. Indeterminate cause and autoimmune hepatitis were the most frequent causes of ALF in Argentina.

Whether these findings are related to specific changes in intensive care practice requires further study.

P-41
EVALUATION OF LYSOSOMAL ACID LIPASE ACTIVITY IN CIRRHOTIC PATIENTS FROM DIFFERENT ETIOLOGIES AFTER LIVER TRANSPLANTATION

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Introduction. Lysosomal acid lipase (LAL) is an enzyme that participates in the lysosomal digestion of lipids and its activity is decreased in patients with cirrhosis due to non-alcoholic fatty liver disease (NAFLD). **Objective.** To evaluate the activity of LAL in cirrhotic patients from different etiologies after liver transplantation. **Material and methods.** We performed an observational study. We included adult patients from both sexes who were receptors of liver transplant during the period from 2014 to 2015. Demographic data and the etiology of cirrhosis were recorded. The enzymatic activity of the LAL was determined in the patients from different cirrhosis etiologies after the liver transplant. The demographic data are presented as numbers with percentages and measures of central tendency and dispersion as appropriate. To compare the enzymatic activity between the different etiologies, the one-way ANOVA and Student's *t* tests were performed as appropriate. A $p < 0.05$ was considered statistically significant. **Results.** LAL determinations were obtained in 74 patients. The median of age was 57 years, the predominant sex was man (58%) and the most frequent etiology was infection by the hepatitis C virus (44%). The levels of enzymatic activity were different among the different etiologies of cirrhosis in the period after liver transplant ($p = 0.015$) (Figure 1). The activity levels of LAL were lower in the groups with NAFLD (97 pmol/hr/sample) and alcoholic cirrhosis (102 pmol/hr/sample). When comparing the enzymatic activity of these etiologies in an individual way whit the other etiologies, a statistically significant difference remained in NAFLD ($p = 0.035$) and alcoholic cirrhosis ($p = 0.040$). **Conclusions.** The activity levels of LAL are lower in patients with prior NAFLD and alcoholic cirrhosis after liver transplantation. **Conflict of interest statement.** This work was partially subsidized by Alexion.

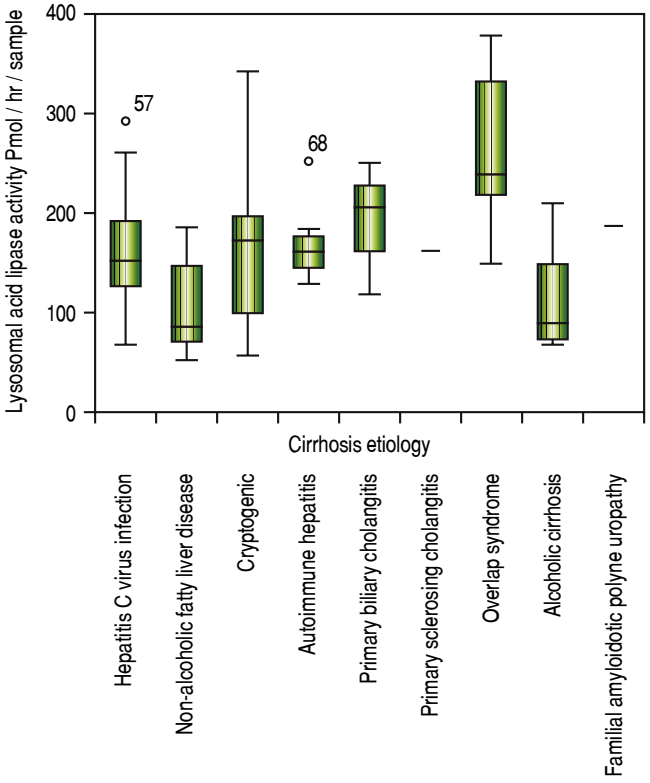

Figure 1 (P-41). *Lysosomal acid lipase enzymatic activity levels among liver transplant patients with prior cirrhosis from different etiologies.*

P-52
HEPATOPULMONAR SYNDROME AFTER LIVER TRANSPLANTATION IN A SINGLE CENTER IN PERU

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Introduction. Hepatopulmonary syndrome (HPS) is a serious complication of liver disease, which is characterized by the presence of intrapulmonary vasodilation and progressive hypoxemia. Liver transplantation is the only effective treatment. **Objective.** To show our results of patients with hepatopulmonary syndrome undergoing liver transplantation. **Materials and methods.** Retrospective, descriptive and cross-sectional study. From March 2000 to December 2016; 226 liver transplants were performed. Of the total, 25 patients were excluded: 12 retransplantation, 9 liver-kidney combined transplants, 2 transplants for acute liver failure, 2 transplants in non-cirrhotic patients. Of the 201 patients with pre transplant diagnosis of liver cirrhosis, 19 criteria for SHP; who were distributed according to age, sex, hypoxemia level (pO2), Child Pugh score and MELD score. The reversibility of hypoxemia after liver transplantation was measured with a cut-off of $p02 > 75$ mmHg. **Results.** The prevalence of SHP in our series was 9.45%. The average age was 41 years (14-65); the M / F ratio of 1.65. The 78.94% (15/19) were adults. 89.5% (17/19) were Score of CHILD B and C, and 68.4% had severe and very severe SHP. In 94.11% of patients, reversibility SHP founded. The early mortality rate (30 days) in patients with SHP was 10.4%. **Conclusions.** The prevalence of HPS in our series was 9.45%. Patients with and without SHP had similar survival.

P-105
POTENTIAL EXPANSION OF DECEASED DONORS INCLUDING ANTI-HCV+: A POPULATION BASED CROSS-SECTIONAL STUDY FROM ARGENTINA

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Background and aims. With the advent of new direct-acting antiviral agents (DAAs) for the treatment of hepatitis C (HCV), the pool of cadaveric donors could potentially be expanded with the use of anti-HCV+ donors. We sought to evaluate the prevalence of anti-HCV+ in all deceased donors from 2006 to 2017 in Argentina. **Material and methods.** A cross sectional study from Argentina analyzing official data from the National Procurement of Transplantation (INCUCAI) was performed. Data from all type of donors, including tissue only, effective donors (those whom transplantation was effectively done) and non-effective donors were analyzed. Viral serologic tests were done in all donors during the procurement process, including anti-HCV (ELISA), hepatitis B virus antigen (HBsAg), core antigen antibody (HBc IgG), anti-HBs. A stratified analysis according to the type of donor and anti-HCV, HBsAg and HBc IgG serologic status was done. Chagas disease and HIV serologic status were also included in the analysis. We searched donor rates per million population per year and overall population/year from official National reports. **Results.** From 2006 to 2017, 11,421 deceased donors were included (tissue donors only 42.2%, non-effective 5.5% and effective donors 52.3%). Demographic characteristics were age 49 ± 19 years; male / female ratio was 1.6:1. Overall, serologic tests were positive as follows: anti-HCV 1.12% (n = 124 patients), HBsAg in 0.4% (n = 49), HBc IgG 2.6% (n = 287), HIV 0.26% (n = 26) and Chagas disease was observed in 3.7% (n = 420). Prevalence ratio per periods among anti-HCV+ showed that the highest prevalence was observed in 2007 (1.43%) and the lowest prevalence in the last 2 years 0.57% in 2016 and 0.79% in 2017. Prevalence for anti-HCV+ among type of donors was significantly higher in non-effective donors 6.46% (n = 39 / 604), followed by tissue donors only 1.31% (n = 61 / 4649) and lower in effective donors 0.41% (n = 24 / 5787; P < 0.0001). Among HBV tests, the highest and lowest HBsAg prevalence were observed in 2007 (0.67%) and in 2017 (0.30%), respectively; whereas the highest HBc IgG prevalence was observed in 2007 (4.2%) and the lowest prevalence in 2017 (1.45%) (Figure 1). HBc IgG, HBsAg among type of donors was significantly higher among non-effective donors 5.74% (n=36) than tissue donors 2.59% (n = 125) and effective donors 2.08% (n = 124). **Conclusions.** The prevalence of anti-HCV in deceased organ and tissue donors in Argentina is declining. The potential use of these donors, taking into account the possibilities of DAAs treatment would not significantly increase the donor pool. **Acknowledgments.** We thank the INCUCAI for the support of this research.

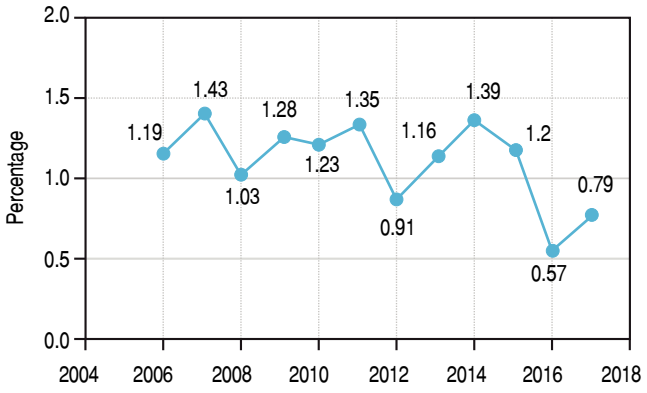

Figure 1 (P-105). *Prevalence of anti-HCV in decease organ and tissue donors in Argentina.*

P-135
INFREQUENT BILIARY COMPLICATIONS IN LIVER TRANSPLANT PATIENTS

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Introduction. Biliary complications are an important cause of morbidity and mortality in patients with orthotopic liver transplantation (OLT). The majority of these complications are due to stenosis, lithiasis and leaks. The risk factors for developing these types of complications are identified and described. However, there are other less frequent complications, such as Oddi's sphincter dysfunction, biloma or hemobilia, of which there is no identification of predisposing risk factors. **Material and methods.** A descriptive retrospective study of patients with post-transplant biliary complications with retrograde endoscopic cholangiopancreatography (ERCP) performed between 2003 and 2017 in the Digestive Endoscopy Unit and the Hepatology Service of the Hospital Clínic de Barcelona. The prevalence, causes and predisposing risk factors for infrequent biliary complications after Liver Transplantation will be analyzed. **Results.** 267 out of 679 ERCP procedures performed in post-OLT patients between 2003 and 2017 were reviewed. Of these, 243 had post-OLT biliary complications, while 24 patients presented non-biliary complications. Of the total, 186 were men (69.7%) with a mean age of 64,23 ± 10,86 years. 203 patients (76%) presented frequent complications (anastomotic / non-anastomotic stenosis, lithiasis / biliary mud and biliary leaks). The other 40 patients (17%) presented uncommon complications such as dysfunction of the sphincter of Oddi, bilomas, hemobilia and mold of biliary mud. In the majority of patients (47.6%) the initial cause that motivated the transplant was HCV, followed by Alcohol (17.2%), HBV (8.6%), fulminant hepatitis (8.2%), BPC (2.6%) and PSC with 0.4%. The variables age, gender, type of transplant, etiology and HCV positive were compared between patients with frequent complications (stenosis, biliary leak, stone / mud) and infrequent complications (dysfunction of Oddi, biloma, hemobília and biliary mold). No significant differences were observed between the two groups. **Conclusions.** No significant differences were found between patients with frequent

and infrequent complications regarding age, gender, type of liver transplantation, etiology and positivity for HCV. ERCP is a useful and safe diagnostic and therapeutic technique for infrequent biliary complications post-OLT.

P-139
INCREASING TRENDS OF WAITLIST REGISTRATION FOR AUTOIMMUNE HEPATITIS AND PRIMARY BILIARY CHOLANGITIS IN A COUNTRY WITH HIGH PREVALENCE OF AUTOIMMUNE LIVER DISEASE

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Background. In United Kingdom and United States, primary sclerosing cholangitis (PSC) is the most prevalent indication of liver transplantation due to autoimmune liver disease. We aimed to describe waiting list and liver transplantation trends for PSC, primary biliary cholangitis (PBC) and autoimmune hepatitis (AH) in a country with high prevalence of autoimmune liver disease. **Material and methods.** We designed a population-based, time-series analysis of patients who were listed and/or received a liver transplantation for AH, PBC or PSC between 2006-2017 in Argentina. Waiting list registrations and liver transplantation proportions were estimated, the denominator was the number of patients waitlisted or transplanted each year. Also, cumulative incidence rates of waiting list registrations and liver transplantation were calculated using the adult Argentinian population as denominator (standardized for age and sex using WHO standard population). **Results.** The mean proportion of waiting list registrations for AH, PBC and PSC reached 9.66%, 5.07% and 0.85% respectively. Wait-listing rates for AH and PBC increased significantly, with an annual percentage change (APC) of + 4.9%; p = 0.01 and +5.5%; p = 0.01 respectively. Patients with AH and PBC aged 40-59 years showed the highest increase in waiting list registration rates with an APC +7.2%; p = 0.01 and +13.6%; p = 0.01 respectively. Wait-listing trends for PSC remained stable during the study period (APC +1.4%; p = 0.4). Finally, the mean proportion of liver transplantation for AH, PBC and PSC reached 10.69%, 5.99% and 3.64% respectively. Liver transplantation trends remained stable (Figure 1). **Conclusion.** In the last decade, wait-listing for both AH and PBC increased steadily, specially affecting middle aged patients and despite available effective treatment, suggesting that in countries with high prevalence of AH and PBC there is room for improvement in medical care.

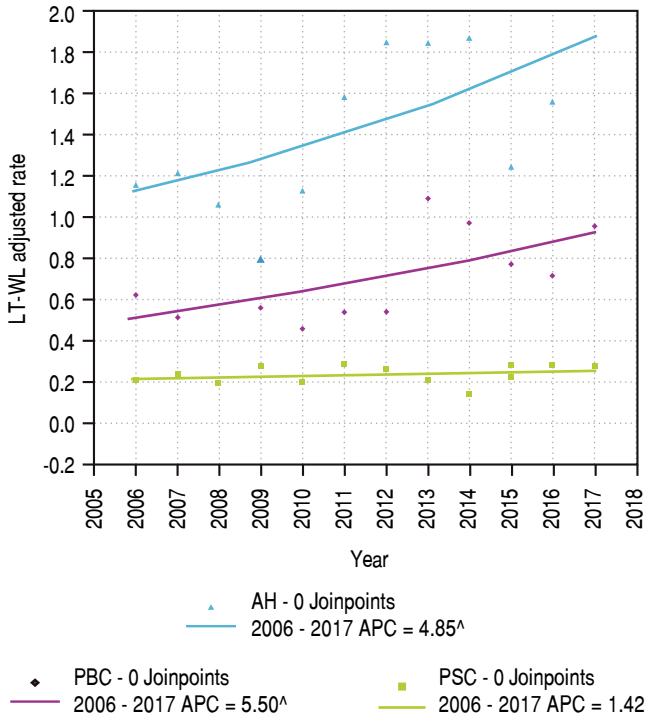

Figure 1 (P-139). *Trends in standarized cumulative incidence rates (per 1,000,000 persons) for liver transplant waiting list registrations according to autoimmune disease etiology in Argentina (2006 – 2017 period). Note: Cumulative incidence rates of waiting list registrations in Argentina stratified by disease etiology: autoimmune hepatitis (AH), primary biliary cholangitis (PBC) and primary sclerosing cholangitis (PSC).*

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MODEL FOR END-STAGE LIVER DISEASE EXCEPTION AND INIQUITY

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In Brazil, the MELD (Model for End-stage Liver Disease) score is used for graft allocation. Certain patient populations, such as patients with hepatocellular carcinoma (HCC), receive MELD exception points to account for their increased waiting list mortality, which is not reflected by their MELD score. We retrospectively studied 879 patients on the waiting list between January 1, 2007 and December 31, 2016 to compare the inclusion rates on the waiting list for transplantation, death list, list removal and transplantation between patients with and without exception points. Kaplan-Meier cumulative incidence curves were constructed for each waiting-list result and compared using the log-rank test. Competitive risks among primary endpoints were analyzed using multivariate hazard ratios (HR), considering having or not MELD exception points. Patients with exception points were transplanted 3 times faster than patients with biological MELD (HR 3.08, 95%CI 2.55-3.72, P < 0.001) and were less likely to die while on the waiting list (HR 0.38, 95%CI 0.26-0.54, P < 0.001). The median time on the waiting list was 5.6 and 25 months, respectively. Our results demonstrated that in our country patients on the waiting list

with exception points (in most cases with HCC) have a clear advantage over candidates listed with biological MELD. **Acknowledgments.** The authors thank the Liver Transplantation Group at Santa Casa de Misericórdia de Porto Alegre, RS, Brazil. Financial disclosure. The authors have no financial relationships relevant to this article to disclose. **Conflicts of interest.** The other authors have no conflict of interests to disclose.

P-155
LIVER TRANSPLANT FOR ACUTE LIVER FAILURE IN AN UNIVERSITY CLINICAL HOSPITAL: A 10 YEARS REVIEW

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Introduction. Acute liver failure (ALF) is a rare and lethal condition which has a mortality close to 90% without liver transplant (LT). International series report 18% of ALF as a cause of LT. There are few epidemiological studies of LT for ALF in Chile. **Objectives.** To perform a clinical and epidemiological characterization of patients undergoing LT for ALF and report both surgical complications and survival. **Material and methods.** Retrospective study, patients undergoing LT for ALF from January 2007 to July 2017, at the Clinical Hospital of the Pontificia Universidad Católica de Chile, Red-UC Christus. We analyzed demographic and surgical variables, etiology, hemorrhagic, biliary and infectious complications. Follow-up and evaluation of survival at 30 days and one year was performed. **Results.** Of 221 LT, 35 patients were transplanted by ALF. Seventy-four percent were women, average age 36 years, 40% group O-IV, average BMI 26; Autoimmune Hepatitis was the most frequent cause (65.7%), hepatitis B 5.7%, cryptogenic 22.8%. Average waiting time for LT was 5 days, cold ischemia 7 hours 52 min. 30-day survival was 82.9%, one-year survival was 77.1%. Biliary complications 22.5%, vascular 14.2%, need for renal replacement therapy in 1 patient. Retransplant was performed in 2 patients. **Conclusion.** ALF continues to be an entity with very high mortality. Viral etiology has decreased in Chile as around the world, being autoimmune hepatitis an important etiology of ALF and LT in our hospital. In centers of experience, the survival of patients subjected to LT is >70%, similar to our report.

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LIVER TRANSPLANTTATION FOR HEPATOCELLULAR CARCINOMA (HCC) IN URUGUAY. APPROACH FROM ANATOMOPATHOLOGY AND THE ROLE OF THE IMMUNOHISTOCHEMISTRY (IHC)

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Introduction. Hepatocellularcarcinoma (HCC) is a leading cause of liver transplant and the second cause in Uruguay. The explant analysis has clinical relevance and prognostic value. **Objective.** Describe the anatomopathological characteristics and the IHC of the HCC from the National Liver Transplant Program in Uruguay, and their clinical outcome. **Material and methods.** Retrospective and descriptive study between 07/2009-01/2018. Follow-up: 6 to 108 months. Inclusion criteria: Pre transplant and incidental HCC (HCCi). Clinical data, macroscopic and microscopic analysis were collected. The IHC markers were: Glipican3, Glutamino Synthetase (GS), Hit Shock Protein 70 (HSP70), CD 34, Cytokeratin19 and p53. The results were presented in frequencies, central tendencies and dispersion. **Results.** 37 Patients included (4 HCCi). 1 was a dysplastic nodule. Mean age: 56. 85% were men. All cases were cirrhotic. Etiology: Alcoholic liver disease 44%, Viral 32%, NASH 8%, autoimmune 8%. 80% had overweight or obesity. 8% had AFP over 200ng/ml. 55% met Milán criteria, 11% were beyond Milán but within UCSF. 33% were beyond UCSF. 70% met Up to seven. 5% had macrovascular and 8% microvascular invasion. 60% were Edmondson III.75% were Glipican 3, 94% GS, and 91% HSP 70 positive. All HCC had at least 2 of them positive. 94% were CD34 and 22% were p53. All were Cytokeratin 19 negative. Outcomes: 13% HCC recurrence (all beyond UCSF).2 cases had macrovascular invasion. **Conclusion.** Almost 2/3 of patients met UCSF or Up to 7 criteria. Patients beyond Up to 7 were at risk of recurrence. The IHQ was useful to differentiate dysplastic nodules from HCC, but wasn't useful to predict recurrence.

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MUSCLE MASS REDUCTION AS A MORTALITY PREDICTOR IN PATIENTS ON LIVER TRANSPLANT WAITING LIST

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Introduction. The reduction of muscle mass (MM) is a frequent condition in patients with cirrhosis. Although the implementation of the MELD score has managed to reduce mortality and waiting time before undergoing transplant, it has certain

limitations. **Objectives.** To explore the association between MM reduction and mortality in a cohort of patients with cirrhosis evaluated for liver transplantation. **Material and methods.** Patients with cirrhosis were prospectively analyzed to become candidates for liver transplantation. MM was assessed with an abdomen CT scan, specifically at L3 level. The muscle mass index (MMI) was calculated adjusting the MM to the height. Median and interquartile range (RIC) were reported for nonparametric continuous variables. Data were analyzed using Ranksum test and Fisher's exact test for continuous and dichotomous variables respectively. A $p < 0.05$ was determined to consider statistical significance. **Results.** Fifty cirrhotic patients were analyzed. The follow-up days were 218 (IQR 154-346). The median MELD was 13 (IQR 11-16). 50% of the patients showed a decrease in the MMI (n = 25). There were 11 deaths, 9 of them included in the decreased IMM group and 2 in the normal IMM group ($p = 0.01$). The overall mortality was 26%. 32 patients were included in the subgroup with MELD < 15, 46.8% showed decreased IMM. 45.16% presented ascites. 30% died in the group with decreased IMM and none in the group with normal IMM ($p = 0.012$). The higher mortality was observed in the group of patients with low MMI and ascites, but with a p that did not reach statistical significance. **Conclusion.** The reduction of MM is a frequent condition in patients with cirrhosis. The reduction of MM is associated with higher mortality in this group of patients.