

stages, multiple series demonstrated 5–20% prevalence in cirrhotic patients.

Aim: To identify risk factors for the development of PVT in cirrhotic patients.

Material and methods: Research Design: Case-control study. Procedure: We searched medical records from inpatients during 2019 with the diagnosis of PVT; cirrhotic patients with PVT were used as cases and paired in a 1:2 ratio with cirrhotic patients without PVT. Qualitative variables were depicted as frequencies and percentage, numeric variables as mean and standard deviation. X², Fisher's exact, student's t and Mann-Whitney's U were used to compare groups accordingly. Logistic regression was used to examine risk factors. *P* value <0.05 was considered statistically significant.

Results: Out of 1371 records, 40 patients with PVT were found (2.92%); 30 of them with cirrhosis were paired with 60 non-PVT cirrhotic patients. 53 (58.9%) were male; mean age: 56.2 ± 13.9 years. According to Child-Pugh: 49 (54.4%) A, 22 (24.4%) B and 19 (21.1%) C. Fifteen (16.7%) had hepatocellular carcinoma (HCC). PVT was more prevalent in women than men (17/37 vs. 13/53 [45.9 vs. 24.5%]; OR = 2.6, IC95%: 1.1–6.4; *P* = 0.03). Patients with HCC had a higher prevalence of PVT against those without HCC (11/15 vs. 19/75 [73.3 vs. 25.3%]; OR = 8.1, IC95%: 2.3–28.5; *P* = 0.001). Decompensated cirrhosis patients had a higher rate of PVT than compensated patients (19/41 vs. 11/49 [46.3 vs. 22.4%]; OR = 2.9, IC95%: 1.2–7.4; *P* = 0.02). Adjusted multivariate logistic regression model is shown in Table 1.

Table 1
Adjusted multivariate logistic regression model exploring risk factors for PVT in patients with cirrhosis.

Variables	<i>P</i>	OR	95%CI	
			Lower	Upper
Female	0.06	2.690	0.951	7.606
Hepatocellular carcinoma	0.005	7.722	1.876	31.783
Child-Pugh B	0.86	1.114	0.325	3.820
Child-Pugh C	0.07	3.184	0.889	11.400
Constant	0.000	0.165		

Conclusions: PVT is more frequent in women and decompensated cirrhosis, the presence of HCC in cirrhotic patients is the main prothrombotic factor.

Conflicts of interest: The authors have no conflicts of interest to declare.

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Prevalence and characteristics of cirrhotic patients with portal vein thrombosis admitted in the Gastroenterology Department of the Hospital General de Mexico

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Background and aim: Portal vein thrombosis (PVT) is a complication in the natural history of liver disease, a "rebalanced" coagulation system can promote bleeding or thrombotic tendency. The prevalence of PVT in cirrhosis is 1% among compensated patients and 8–25% in decompensated patients. Aim. To determine the prevalence and characteristics of cirrhotic patients with PVT.

Material and methods: Research design: Descriptive, cross-sectional / prevalence. Procedure: We analyzed medical records of patients admitted during 2019, all cirrhotics subjects with PVT were included. Qualitative variables were expressed in frequencies and percentages and numerical variables in mean and standard deviation.

Results: Of 491 cirrhotic patients hospitalized to the Gastroenterology department in 2019, we found 24 patients with PVT (4.89%), 15 (62.5%) were women, mean age was 58.13 ± 13.51 year. 6 (25.0%) with malignancy, of those latter 6/6 (100.0%) with hepatocellular carcinoma. Regarding of cirrhosis etiology: 9 (37.5%) were of unknown cause, 6 (25.0%) ASH, 3 (12.5%) from NASH, 1 (4.2%) from hepatitis-C, 1 (4.2%) autoimmune hepatitis and 1 (4.2%) CBP. Regarding Child-Pugh: 11 (45.8%) B, and 13 (54.2%) C. Mean MELD was 21.58 ± 9.74. Upper gastrointestinal bleeding was present in 17 (70.8%) subjects, of those 15 (88.2%) due to esophageal varices and 11 (64.7%) for esophageal-gastric varices. 5 (41.7%) presented spontaneous bacterial peritonitis (SBP). 9 (37.5%) admitted with hepatic encephalopathy. 21 (87.5%) with ascites, of those: 6 (28.6%) grade I, 12 (57.1%) grade II, only 3 (14.3%) grade III. Complementary studies in patients without acute infection: leukocytes: 8,058 ± 4.41, creatinine 1.54 ± 0.86, albumin: 2.5gr/dl ± 0.62, AST: 127 U/L ± 224.83, ALT: 70 U/L ± 107.44, ALP: 155.75 U/L ± 74.51, GGT: 62.58 U/L ± 52.04, total bilirubin: 5.41 mg/dl ± 7.34, PT: 18.20 ± 4.32, INR: 1.57 ± 0.40. Regarding the location of the thrombus: 14 (58.3%) presented in the portal vein trunk, 6 (25.0%) in the trunk and its branches, and 4 (16.7%) only in one branch.

Conclusions: PVT is more frequent in cirrhotic women, decompensated cirrhosis, alcohol related and the presence of hepatocarcinoma. The most frequent location was in the portal vein trunk.

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Prevalence and characteristics of non-cirrhotic patients with thrombosis of the portal system

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Background and aim: Portal vein thrombosis (PVT) is the blood clot formation within the trunk of the portal vein or its main branches. PVT prevalence is ~1% in the general population. Aim: To determine the prevalence and characteristics of non-cirrhotic patients with PVT.

Material and methods: Research design: Descriptive, cross-sectional/prevalence. Procedure: We reviewed the medical records of all the patients admitted in 2019 with diagnosis of PVT. Of those we included only non-cirrhotic patients with a diagnosis of PVT. Qualitative variables were expressed as frequencies and percentages, numerical variables as mean and standard deviation.

Results: From 1371 patients admitted in the Gastroenterology Department in 2019, we found 40 patients with PVT (2.92%), of those only 10 non-cirrhotic patients were included. The prevalence was 0.76%; eight (80%) were men, mean age was 48.38 ± 12.4 years-old. 1 patient had autoimmune hepatitis (10.0%) and 2 (20.0%)



acute pancreatitis. 4 (40.0%) neoplasia, of them 1 (25.0%) with hepatocellular-carcinoma, 1 (25.0%) with cholangiocarcinoma, 1 (25.0%) with colon cancer and 1 (25.0%) with pancreatic cancer. Upper gastrointestinal bleeding was found in up to 5/10 (50.0%), of them: 2 (40.0%) had isolated gastric varices. 3 (30.0%) presented infection, of those 100.0% presented liver abscess. 9 (90.0%) had ascites, of them 7 (77.8%) grade I and 2 (22.2%) grade II. The results of complementary studies in patients without acute infection: leukocytes: $13,657 \pm 7.87$, neutrophils: $12,314 \pm 8.12$, albumin: $2.8 \text{ gr/dl} \pm 0.64$, AST: $54.55 \text{ U/L} \pm 40.96$, ALT: $38.57 \text{ U/L} \pm 22.08$, ALP: $212.57 \text{ U/L} \pm 171.27$, GGT: $233.43 \text{ U/L} \pm 155.98$, total-bilirubin: $1.37 \text{ mg/dl} \pm 0.70$, PT%: 74.71 ± 20.87 , DHL: $396.80 \text{ U/L} \pm 270.17$. Regarding thrombus localization: 6 (60.0%) were in the portal vein and its branches, 3 (30.0%) in the portal vein trunk and 1 (10.0%) in a single branch. The mean flow of the portal vein was $20.70 \text{ cm/s} \pm 15.52$.

Conclusions: PVT in non-cirrhotic patients is more frequent in men, with protrombotic entities such as neoplasms, autoimmune diseases, pancreatitis and liver infections. The main pattern found in the liver function tests was cholestatic predominance and the most frequent localization was the portal vein trunk.

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Characteristics of ascitic fluid and flow of the portal system in cirrhotic patients with diagnosis of portal vein thrombosis

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Background and aim: Portal vein thrombosis (PVT) in cirrhotic patients is most commonly detected incidentally on routine ultrasound (US), but should be suspected in any patient with worsening or liver decompensation and in patients with a portal vein flow $<15 \text{ cm/s}$. Patients with acute PVT may develop or worsen ascites. The detection of multiple small vessels flow at the usual portal vein site is considered cavernous (chronic) transformation that can form in as little as 6 days. Aim. To determine the characteristics of the ascitic fluid and the portal vein flow of cirrhotic patients with PVT.

Material and methods: Research design: Descriptive, cross-sectional / prevalence. Procedure: Ascitic fluid cytology and Doppler ultrasound (DUS) results of patients admitted during 2019 were reviewed, from these all the cirrhotics with PVT were selected. The qualitative variables were expressed in frequencies and percentages and numerical variables in mean and standard deviation.

Results: Of 491 cirrhotic patients admitted to the Gastroenterology department in 2019, we found 24 cirrhotic patients with PVT (4.89%), of them regarding the composition of the ascitic fluid: the mean protein value was $1.71 \text{ gr/dl} \pm 1.37$, DHL: 88.00 ± 5.56 , and glucose was 165.67 ± 66.52 . On the other hand, the mean cell count in the cytological exam of patients with PVT was 144.67 ± 191.44 . Regarding the flow characteristics in the DUS, 14 (58.3%) presented chronic characteristics reported as cavernomatosis of the portal vein. The mean flow of the portal vein was $19.04 \text{ cm/s} \pm 4.71$, lastly, 13 (54.2%) cirrhotic patients diagnosed with PVT 4 (16.7%) had flow less than 15 cm/s .



Conclusions: In our hospital, according to the laboratory normal ranges, most patients diagnosed with PVT presented an increase in LDH and had an increase in the number of cells in the ascites fluid, and more than half were diagnosed in the late stage with recanalization and more than ten percent of these patients were at high risk for new thrombosis due to a reduced flow of the portal vein.

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Most commonly liver function test alterations on adult patients with septic shock



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Background and aim: Liver function test (LFT) alterations in critically ill patients are frequent. The objective of the following investigation is: to describe the prevalence, patterns and clinical implications of liver function test alterations in adult patients with septic shock in ISSEMyM Medical Center.

Material and methods: Observational, retrospective study, realized from January 2016 to February 2020. Inclusion criteria: adult patients admitted in Internal Medicine and Surgery services with septic shock diagnosis, with no evidence of preexistent chronic liver disease and complete medical records. Analyzed variables: age, sex, shock etiology, LFT, concomitant diseases and outcome of the hospitalization. The "R" factor (R) was calculated to classify patients in three groups; cholestatic ($R = <2$), hepatocellular ($R = >5$), mixed pattern ($R = 2$ to 5), an analysis per subgroup was performed.

Results: 550 clinical records were reviewed, 360 met inclusion criteria. 48.3% ($n = 174/360$) presented LFT alterations. According to R, cholestatic pattern was predominant in 81% ($n = 141/174$), followed by the mixed pattern with 10.3% ($n = 18/174$) and the hepatocellular with 8.6% ($n = 15/174$). The main etiology of septic shock was pneumonia in all three groups. On the comorbid diseases, the highest prevalence in the cholestatic group was diabetes mellitus (57.4%) and hypertension in the mixed and hepatocellular group with 72.2% (13/18) and 66.7% (10/15) respectively. Mortality rate in the group without LFT alterations was 30% (55/186), and 38% (66/174) in LFT group with alterations. In subgroup analysis, the group with the highest mortality was the mixed pattern with 11/18 deaths (61.1%), followed by the hepatocellular group with 9/15 (60%) and lastly the cholestatic with $n = 46/141$ (42.6%).

Conclusions: LFT alterations in patients with septic shock are common; in our study, the general prevalence and predominant pattern was the cholestatic group, similar to international literature. The group with the highest mortality reported in the international literature is the hepatocellular (57%), however, in our study, hepatocellular and mixed pattern presented a similar mortality rate (60% and 61.1%, respectively).

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