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VARICEAL VERSUS NON-VARICEAL ETIOLOGY OF GASTROINTESTINAL BLEEDING IN PATIENTS WITH CIRRHOSIS AND RELATED SECONDARY COMPLICATIONS

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Introduction and Objectives: Liver cirrhosis is a highly prevalent worldwide disease and in the last decade, there has been an increase of 13%. Patients with advanced liver disease are at higher risk of developing life-threatening decompensations; one of these main complications is the presence of upper gastrointestinal bleeding, representing a frequent cause of hospital admission and mortality. Broad knowledge of these complications is essential to improve the diagnostic and therapeutic approach in these patients.

Objectives: To compare the different complications related to upper gastrointestinal bleeding of variceal vs. non-variceal origin and the characteristics of these patients.

Methods: Case-control study conducted in a cohort. The cohort was made up of cirrhotic patients due to any etiology who were admitted for hospitalization at our unit in a period from January 2017 to May 2021; two groups were extracted, those with variceal bleeding formed the cases group and, those with non-variceal hemorrhage the control group and a comparison between groups was made using X2 or Fisher's exact test or Student's test accordingly to the type and distribution of each variable, considering significant a value of $p < 0.01$

Results: A total of 294 cirrhotic patients with gastrointestinal bleeding were included, 169 men (57.5%); mean age 54.6 ± 11.9 years; mean days of hospital stay 2.19 ± 2.74. Regarding the etiology of liver cirrhosis, the main etiology was alcohol in 39.7% (117), followed by viral etiology in 6.4% (18), NASH in 5.8% (17) and, less frequently due to autoimmune causes in 3.4% (10), however, up to 44.7% remained with indeterminate etiology. Regarding the origin of gastrointestinal bleeding, 209 (71.1%) were of variceal origin and 85 (28-9%) were of non-variceal origin. A total of 94 (32%) developed acute kidney injury (AKI), and only the variceal origin was related to a higher risk of developing AKI 57/209 vs. 37/85, $p < 0.01$ (OR = 1.6; 95% CI: 1.2-2.2) but there was no difference regarding the etiology of gastrointestinal bleeding and development of other complications such as encephalopathy, ascites, jaundice, infections, need a transfusion, severe hypovolemic shock, death. See table.

Conclusions: The etiology (variceal vs. non-variceal) of the gastrointestinal bleeding has no impact on the development of other complications in cirrhosis; therefore, therapeutic prophylaxis and surveillance strategies should be prioritized in the patient with cirrhosis, regardless of the origin of bleeding. The risk of AKI should always be considered and monitored when the origin of the bleeding is variceal since this study shows the closest relationship between these two complications.

The authors declare that there is no conflict of interest

The comparison regarding the development of additional complications in relation to variceal or non-variceal etiology in cirrhotic patients

Complication	Total n=294	Variceal bleeding n=209	No-variceal bleeding n=85	P
Acute kidney injury	94 (32.0)	57 (27.3)	37 (43.5)	<0.01
Hepatic encephalopathy, n(%)	128 (43.5)	86 (41.1)	42 (49.4)	0.19
Ascites, n (%)	55 (18.7)	36 (17.2)	19 (22.3)	0.31
Jaundice n (%)	51 (17.3)	32 (15.3)	19 (22.3)	0.14
Infections, n (%)	65 (22.1)	48 (23.0)	17 (20.0)	0.58
Need of transfusion, n(%)	138 (46.9)	99 (47.4)	39 (45.9)	0.82
Hypovolemic shock **n(%)**	17 (5.8)	13 (6.2)	4 (4.7)	0.78
Death, n(%)	4 (1.4)	3 (1.4)	1 (1.2)	1.0

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CORRELATION BETWEEN SARCOPENIA AND HEPATIC ENCEPHALOPATHY IN PATIENTS WITH CIRRHOSIS

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Introduction and Objectives: Malnutrition is a frequent complication in patients with cirrhosis, associated with greater disease progression, complication rate, and mortality. Sarcopenia is one of the main indicators of malnutrition, characterized by a general decrease

in muscle mass and functional deterioration. CT determination of muscle mass is not easily accessible in routine clinical practice, so practical measurement tools are essential. It has been proposed to classify sarcopenia as severe when decreased muscle strength, muscle mass, and low physical performance coexist. The impact of severe sarcopenia on the risk of developing hepatic encephalopathy is currently unknown. Primary outcome: Determine if there is a significant correlation between the degree of sarcopenia and hepatic encephalopathy. Secondary outcomes: to determine the prevalence of sarcopenia in patients with cirrhosis, the association between sarcopenia and liver decompensation events, to determine the correlation between individual tests (battery of functional physical performance tests [SPPB], grip strength, and skeletal muscle mass) with hepatic encephalopathy.

Materials and methods: Prospective, cross-sectional, observational, descriptive, and analytical study in patients with liver cirrhosis evaluated by outpatient consultation, with diagnosis confirmed by transitional elastography (Fibroscan® 502 ECHOSENS® equipment). The presence of sarcopenia was determined by measurement of grip strength with a hand-held hydraulic dynamometer (JAMAR® B001D7QDJG) and determination of muscle mass by tetrapolar electrical bioimpedance (OMRON® HBF 500). A positive case was considered when coexisting force ≤27 kg / ≤16 kg and skeletal muscle mass ≤20 kg / ≤15kg in men and women respectively, classifying it as severe sarcopenia with a score of ≤8 pts in SPPB. The presence of hepatic encephalopathy was determined by clinical evaluation and critical flicker rate (cut-off <39 Hz). Logistic regression analysis and Chi-square test were performed.

Results: 96 patients were included, of which 35 (36.4%) had sarcopenia and 21 (60%) were classified as severe sarcopenia. The demographic characteristics and severity of cirrhosis were comparable in patients with and without sarcopenia. In multivariate logistic regression analysis, a significant correlation was demonstrated between the presence of sarcopenia and manifest hepatic encephalopathy p = 0.014, HR 9.05, 95% CI (1.54-52). No significant correlation was shown with ascites (p = 0.08) or recent variceal bleeding (p = 0.53). A significant correlation was demonstrated between previous events of encephalopathy (p = 0.021) and ascites (p = 0.032) with the presence of sarcopenia. Regarding individual tests, a SPPB score ≤8 was independently associated with overt encephalopathy (0.009, HR 19.7, 95% CI (2.1-182). Handgrip strength, chair stand, and muscle mass were not statistically significant.

Discussion and Conclusions: This pilot study suggests that the presence of sarcopenia is significantly correlated with the risk of developing overt hepatic encephalopathy, and the presence of previous ascites could increase the risk of developing sarcopenia. Evaluation of physical performance by SPPB could be independently correlated with the development of hepatic encephalopathy.

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PREVALENCE AND CHARACTERISTICS OF PORTAL VEIN RECANALIZATION IN CIRRHOTIC PATIENTS ADMITTED WITH PORTAL THROMBOSIS IN A THIRD LEVEL CARE CENTER

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Introduction and Objectives: Portal vein thrombosis (PVT) refers to the formation of blood clots within the trunk of the portal vein (PV) or its main branches, which can spread to the superior mesenteric (SMV) and splenic (VE) veins. The natural history of liver cirrhosis is a complication with a "rebalanced" coagulation system that can promote bleeding or a thrombotic tendency. The prevalence in compensated cirrhotic is 1% in and 8-25% in decompensated patients.

Aim: To determine the prevalence and characteristics of PV recanalization in cirrhotic patients with PVT.

Material and methods: Descriptive, cross-sectional/prevalence.

Procedure: We reviewed medical records of all cirrhotic patients admitted with PVT diagnosis from January 2019 to April 2021. We included patients with a diagnosis of PVT. Qualitative variables were expressed as frequencies and percentages. The numerical variables were expressed as means and standard deviations. We use X2, Fisher's exact, Student's t, and Mann-Whitney U to compare groups as appropriate.

Results: Of 553 cirrhotic patients admitted from January 2019 to April 2021, 48(8.67%) patients with PVT diagnoses were included. Of these, 27(56.3%) were women, with a mean age of 59.37±12.67 years, 9(18%) with a diagnosis of cancer, of which 8(16.7%) were hepatocellular carcinoma, 2(33.3%) extended to the two arms, 6(12.5%) received treatment, 100% of the treatment was based on low molecular weight heparin. According to the degree of recanalization: 37 (77.08%) recanalized, 27(56.3%) did so partially, of them, 24(88.9%) were spontaneous; 10(20.8%) recanalized utterly, of which 90% were without treatment, with no significant difference between recanalization to free progression vs. treatment (p=0.179) and 11(22.9%) did not recanalize. Regarding the characteristics of the thrombosis by imaging studies, 26(54.2%) were chronic, 28(58%) partial, only 9 (18.8%) with cavernomatous transformation, 30(62.5%) were located in the main trunk, 6(12.5%) extended to the SLM and 11(22.9%) presented flow <15cm/s.

Discussion: In cirrhotics with recent or partial occlusion (> 50% of the lumen) or thrombosis of the main PV or SMV, therapy should be considered. Anticoagulant or interventional therapy has no benefit complete chronic occlusion of the main PV or cavernomatous transformation. Spontaneous recanalization occurs in 40% in 3 months, and with therapy, it is 80%. Several cohort studies reported that near 50% recanalize partially or totally in the next three months, and up to 80% recanalize at 12 months. Clinical trial data are weak regarding the indications for treatment for PVT without ischemic symptoms. Our study showed that 77.08% of cirrhotic patients with PVT recanalized, most partially during follow-up and more than 80% spontaneously, and only a low percentage presented with cavernomatous transformation. In addition, more than 70% of the patients who recanalized have a low risk of re-thrombosis related to flow.

Conclusions: The prevalence of PVT in cirrhotic patients was relatively low (10%), complete or partial recanalization was very high, even spontaneously, there was no difference in the degree of recanalization with or without anticoagulation.

The authors declares that there is no conflict of interest

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INITIAL EVALUATION OF KIDNEY FUNCTION IN PATIENTS WITH LIVER CIRRHOSIS OF CEIHET, HIDALGO

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