Original Article

Correlation of Thrombocytopenia with Esophageal Grading Varices in Patients of the Disease of Chronic Liver

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ABSTRACT

Objective: The goal of this examination was to discover relationship of thrombocytopenia severity with evaluating of esophageal varices in patients of the disease of chronic liver.

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Medicine Department of Jinnah Hospital in Lahore from June, 2018 to November, 2018.

Materials and Methods: Patients satisfying the incorporation and prohibition criteria were also incorporate for the examination right after taking all the informative consents. Particulars of patients were recorded on a proforma. Detailed history and examination was done for all patients and recorded in same proforma. Laboratory tests were sent including platelet counts. Endoscopy was done and findings were noted. Thrombocytopenia and esophageal varices were labelled as per operational definition. All patients were treated as per hospital protocol.

Results: From 215 patients, the lowest age was calculated as 18 years and highest age was 60 years with mean ± standard deviation 36.30 ± 13.66 years. The minimum platelet count was calculated as 40000 and maximum platelet count was 180000 with mean ± standard deviation 122707 ± 48500.43. The minimum duration of CLD was calculated as 6 months and maximum duration of CLD was 24 months with mean ± standard deviation 14.37 ± 5.13 months. There were 48.4% male patients and 51.6% female patients. Thrombocytopenia was present in 36.3% patients while it was not present in 63.7% patients. Esophageal varices were present in 27.9% patients while it was not present in 72.1% patients.

Conclusion: Thrombocytopenia was present in 36.3% patients while Esophageal varices was present in 27.9% patients. The important relationship was found between presence of thrombocytopenia and presence of esophageal varices. Effect modifiers also showed significant influence.

Key Words: Obesity, Hypothyroidism, Body Mass Index, Diabetes Mellitus

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INTRODUCTION

The Cirrhosis addresses a last phase of reformist hepatic fibrosis portrayed by mutilation of the hepatic engineering and the development of regenerative knobs. It is for the most part viewed as irreversible in its high level stages so, where the only option for the treatment might be liver transplant.

However, inversion of cirrhosis (in its initial stages) has been recorded in a few types of liver infection following treatment of the basic reason. Patients with cirrhosis are defenseless to an assortment of inconveniences and their future is especially decreased.

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Cirrhosis patients may have these symptoms [1].

- The patients with chronic liver disease might have a blemish found on daily physical assessment.
- They might have gone through research facility or radiologic testing or an inconsequential surgery that unexpectedly reveal the cirrhosis presence on the body.
- There might be a presence of decompensated cirrhosis, which can be described as a life threatening or any other severe complication for example, variceal discharge or hemorrhage, ascites, hepatic encephalopathy, or unconstrained bacterial peritonitis.
- Most of the patients never considered to come to the clinical. In fact, in more seasoned audits, cirrhosis was analyzed at post-mortem in dependent upon 30 to 40% of patients. [2,3]

While the patient's pathogenesis is not completely perceived, they are accepted to result from changes in sex hormones digestion[4,5]. One examination recommended that the may increase in the estradiol or free testosterone ratio if there in the presence of spider

angiomata in their body[6,7]. Procured arachnid angiomata are not explicit for cirrhosis since they may likewise be seen ravenous patients (with extreme hunger) or in pregnant women. They can likewise be seen in any case with healthy individuals, who typically have less than three little sores. The number and size of spider angiomata and liver diseases are connect with each other.[8,9] Patients with various and huge spider angiomata might be at expanded danger for variceal drain.

The presence of cirrhosis is sometimes suggested by laboratory abnormalities. In today's medical practice, it is usual of serum sciences to be sent for screening or assessment of explicit complaints. The term "liver capacity tests" (LFTs) is normally utilized, it is uncertain since a considerable lot of the tests mirroring the liver health which is not immediate measurements of the functions. [10,11].

LFTs are the most widely recognized laboratory which incorporate the compound tests (mainly the serum aminotransferases, alkaline or basic phosphatase, and gamma glutamyl transpeptidase), the serum bilirubin, and trial of the functions of synthetic (basically the serum egg whites focus and prothrombin time) [12].

Certain abnormalities discovered on routine cell counts and chemistries can suggest the existence of advanced disease of liver while providing clues to its severity and etiology.

Various noninvasive tests for finding of cirrhosis have been suggested however none has yet arisen as a norm. All things considered, they can give adjunctive data to ordinary research center testing [13,14].

MATERIALS AND METHODS

This cross sectional research was held in Medicine Department of Jinnah Hospital in Lahore from 01.06.2018 to 30.11.2018. The data was collected through Non-probability consecutive techniques of testing and sampling.

Inclusion Criteria

- Patients of both gender as well as age ranging between 18 and 60 years presenting already diagnosed with chronic liver disease (as per operational definition) on history and medical record (diagnosed atleast 6 months ago)
- Willing to take part in the research

Exclusion Criteria

- Patients on beta-blockers for portal hypertension, or having history of endoscopic band ligation or sclerotherapy for esophageal varices assessed by history and medical record
- Patients with hepatocellular carcinoma or evidence of portal vein thrombosis assessed by history and medical record
- Patients with temperamental cardiopulmonary, neurological, or mental illness evaluated according to history, clinical assessment or past clinical record.
- Lung tumor, transitional cell carcinoma or other neoplasia able to shorten life expectancy assessed as per clinical or history records of the patient.
- Patients are not willing to take part in the research

Data Collection Procedure: Patients achieving the inclusion and exclusion standard were involved in the research after taking informed accord. Particulars of patients were recorded on a proforma. Detailed history and examination was done for all patients and recorded in same proforma. Laboratory tests were sent including platelet counts. Endoscopy was done and findings were noted. Thrombocytopenia and esophageal varices were labelled as per operational definition. All patients were treated as per hospital protocol.

Data Analysis Procedure: Statistical Package for Social Sciences (SPSS) rendition was done by utilizing the statistical examination 22. Qualitative information like gender, presence of thrombocytopenia and presence of esophageal varices was introduced as frequencies and rates. Quantitative information such as age was introduced as means and standard deviations. Information was delineated dependent on the sex, age, and the period of CLD.

RESULTS

From 215 patients, the lowest age was calculated as 18 years and highest age was 60 years with mean $\pm$ standard deviation 36.30 $\pm$ 13.66 years. The minimum platelet count was calculated as 40000 and maximum platelet count was 180000 with mean $\pm$ standard deviation 122707 $\pm$ 48500.43. The minimum duration of CLD was calculated as 6 months and maximum duration of CLD was 24 months with mean $\pm$ standard deviation 14.37 $\pm$ 5.13 months.

Table No.1: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Age	18	60	36.30	13.66
Platelet Count	40000	180000	122707	48500.34
Duration of dialysis in months	6	24	14.37	5.31

There were 104 (48.04%) male patients and 111 (51.06%) of the female patients. Thrombocytopenia was present in 78 (36.3%) patients while it was not present in 137 (63.7%) patients. Esophageal varices were present in 60 (27.9%) patients while it was not present in 155 (72.1%) patients.

Table No.2: Distribution of Thrombocytopenia

Thrombocytopenia	Frequency	Percentage
Present	78	36.3
Absent	137	63.7
Total	215	100.0

Spearman rank correlation showed significant correlation between presence of thrombocytopenia and presence of varices of esophageal having p-value of = 0.000. Correlation was important between presence of thrombocytopenia and esophageal varices existence in of both groups of age having p-value < 0.05.

Table No.3: Correlation presence of both thrombocytopenia and esophageal varices

			Thrombo-cytopenia	Esophageal Varices
Spearman's rho	Thrombocytopenia	Correlation Coefficient	1.000	.285**
		Sig. (2-tailed)	.	.000
		N	215	215
	Esophageal Varices	Correlation Coefficient	.285**	1.000
		Sig. (2-tailed)	.000	.
		N	215	215
**. Correlation is significant at the 0.01 level (2-tailed).				

Table No.4: Stratification of presence of thrombocytopenia with respect to age

Age ≥ 40 years				
			Thrombocytopenia	Esophageal Varices
Spearman's rho	Thrombocytopenia	Correlation Coefficient	1.000	.376**
		Sig. (2-tailed)	.	.000
		N	94	94
	Esophageal Varices	Correlation Coefficient	.376**	1.000
		Sig. (2-tailed)	.000	.
		N	94	94
Age < 40 years				
			Thrombocytopenia	Esophageal Varices
Spearman's rho	Thrombocytopenia	Correlation Coefficient	1.000	.215*
		Sig. (2-tailed)	.	.018
		N	121	121
	Esophageal Varices	Correlation Coefficient	.215*	1.000
		Sig. (2-tailed)	.018	.
		N	121	121
*. Correlation is significant				
**. Correlation is significant				

Table No.5: Stratification of presence of thrombocytopenia with respect to Gender

Males				
			Thrombo-cytopenia	Esophageal Varices
Spearman's rho	Thrombocy-topenia	Correlation Coefficient	1.000	.534**
		Sig. (2-tailed)	.	.000
		N	104	104
	Esophageal Varices	Correlation Coefficient	.534**	1.000
		Sig. (2-tailed)	.000	.
		N	104	104
Females				
			Thrombo-cytopenia	Esophageal Varices
Spearman's rho	Thrombo-cytopenia	Correlation Coefficient	1.000	.167
		Sig. (2-tailed)	.	.080
		N	111	111
	Esophageal Varices	Correlation Coefficient	.167	1.000
		Sig. (2-tailed)	.080	.
		N	111	111
**. Correlation is significant				

Table No.6: Stratification of presence of thrombocytopenia with respect to Duration of CLD

Duration of CLD ≤ 12 months				
			Thrombocytopenia	Esophageal Varices
Spearman's rho	Thrombocytopenia	Correlation Coefficient	1.000	-.167
		Sig. (2-tailed)	.	.127
		N	85	85
	Esophageal Varices	Correlation Coefficient	-.167	1.000
		Sig. (2-tailed)	.127	.
		N	85	85
Duration of CLD > 12 months				
			Thrombocytopenia	Esophageal Varices
Spearman's rho	Thrombocytopenia	Correlation Coefficient	1.000	.597**
		Sig. (2-tailed)	.	.000
		N	130	130
	Esophageal Varices	Correlation Coefficient	.597**	1.000
		Sig. (2-tailed)	.000	.
		N	130	130
**. Correlation is significant at the 0.01 level (2-tailed).				

The connection was not important between presence of thrombocytopenia and presence of esophageal varices in female having p-value = 0.080 while Correlation was significant between presence of both thrombocytopenia and esophageal varices in male having p-value = 0.000. Correlation was significant between presence of thrombocytopenia and esophageal varices in duration of CLD ≤ 12 months having p-value = 0.000 while correlation was not significant between presence of thrombocytopenia and presence of esophageal varices in duration of CLD > 12 months having p-value = 0.127.

DISCUSSION

The target of the current study was to discover connection of thrombocytopenia severity with evaluating of esophageal varices of chronic liver condition in patients. In this regard the present cross sectional research was held in Medicine department Jinnah Hospital in Lahore. So two hundred and fifteen cases were involved by fulfilling the additional standards by using non-probability consecutive sampling.

From 215 patients, the lowest age factor was calculated as 18 years and highest age was 60 years with mean ± standard deviation 36.30 ± 13.66 years. The minimum platelet count was calculated as 40000 and maximum platelet count was 180000 with mean ± standard deviation 122707 ± 48500.43. The minimum duration of CLD was calculated as 6 months and maximum duration of CLD was 24 months with mean ± standard deviation 14.37 ± 5.13 months.

In a previous study, one hundred and two patients with thrombocytopenia and esophageal varices were included in this research. There were 62 males and 40 females approximately with the percentage of (60.8%) 39.2%) respectively. The majority of the age of onset of the disease in these patients was 49.49 + or - 14.3 years with range of 11-85 years. One of the major causes of cirrhosis were described as hepatitis C (n=79, 77.5%), hepatitis B (n=12, 11.8%), mixed B and C hepatitis infection (n=8, 7.8%) as well as the Wilson's disease (n=3,2.9%). Almost seven patients had esophageal grade I, grade II, grade III, and grade IV with2 24, 35,36 respectively. Gastric varices were identified in 2 of the patients. Gateway hypertensive gastropathy were identified in 87 patients. There was a converse connection of platelet check with evaluating of esophageal varices ($r=-0.321$, $p < 0.001$). The thrombocytopenia severity expanded as the evaluating of esophageal varices expanded. Thrombocyte check was essentially and conversely connected with the classification of esophageal varices.. [5,16]

There were 48.4% male patients and 51.6% female patients. Thrombocytopenia was present in 36.3% patients while it was not present in 63.7% patients. Esophageal varices were present in 27.9% patients while it was not present in 72.1% patients [17-20].

CONCLUSION

Thrombocytopenia was present in 36.3% patients while Esophageal varices was present in 27.9% patients. The important connection was found between presence of thrombocytopenia and presence of esophageal varices. Effect modifiers also showed significant influence.

Author's Contribution:

Concept & Design of Study:	Talha Khalid
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Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Runyon BA. A Primer on Detecting Cirrhosis and Caring for These Patients without Causing Harm. Int J Hepatol 2011; 2011:801983.
2. Haellen J, Norden J. Liver Cirrhosis Unsuspected During Life. A Series of 79 Cases. J Chronic Dis 1964;17:951.
3. Conn H, Atterbury C. Cirrhosis. In: Schiff L, Schiff E, editors. Diseases of the Liver, 7th ed. Lippencott Company, Philadelphia;1993. p.875.
4. Udell JA, Wang CS, Tinmouth J, et al. Does this patient with liver disease have cirrhosis? JAMA 2012;307:832.
5. Bonacini M, Hadi G, Govindarajan S, Lindsay KL. Utility of a discriminant score for diagnosing advanced fibrosis or cirrhosis in patients with chronic hepatitis C virus infection. Am J Gastroenterol 1997; 92:1302.
6. Lok AS, Ghany MG, Goodman ZD, et al. Predicting cirrhosis in patients with hepatitis C based on standard laboratory tests: results of the HALT-C cohort. Hepatol 2005;42:282.
7. Pirovino M, Linder R, Boss C, et al. Cutaneous spider nevi in liver cirrhosis: capillary microscopical and hormonal investigations. Klin Wochenschr 1988;66:298.
8. Zaman A, Hapke R, Flora K, et al. Factors predicting the presence of esophageal or gastric varices in patients with advanced liver disease. Am J Gastroenterol 1999; 94:3292.
9. Foutch PG, Sullivan JA, Gaines JA, Sanowski RA. Cutaneous vascular spiders in cirrhotic patients: correlation with hemorrhage from esophageal varices. Am J Gastroenterol 1988; 83:723.
10. Erlinger S, Benhamou J. Cirrhosis: Clinical aspects. In: Mcintyre N, Benhamou J, Rizzetto M, et al, editors. Oxford Textbook of Clinical Hepatology. University Press: Oxford; 1991. p.380.
11. Fitzpatrick T, Johnson R, Polano M, et al. Color Atlas and Synopsis of Clinical Dermatology: Common and Serious Diseases, Second edition, McGraw Hill, Inc, New York 1994.
12. Mills PR, Vallance R, Birnie G, et al. A prospective survey of radiological bone and joint changes in primary biliary cirrhosis. Clin Radiol 1981; 32:297.
13. Epstein O, Dick R, Sherlock S. Prospective study of periostitis and finger clubbing in primary biliary cirrhosis and other forms of chronic liver disease. Gut 1981; 22:203.
14. Murrell GA, Francis MJ, Bromley L. Free radicals and Dupuytren's contracture. Br Med J Clin Res Ed 1987; 295:1373.
15. Attali P, Ink O, Pelletier G, et al. Dupuytren's contracture, alcohol consumption, and chronic liver disease. Arch Intern Med 1987; 147:1065.
16. Van Thiel DH, Gavaler JS, Schade RR. Liver disease and the hypothalamic pituitary gonadal axis. Semin Liver Dis 1985;5:35.
17. van Thiel DH, Gavaler JS, Spero JA, et al. Patterns of hypothalamic-pituitary-gonadal dysfunction in men with liver disease due to differing etiologies. Hepatology 1981; 1:39.
18. Soper NJ, Rikkers LF. Effect of operations for variceal hemorrhage on hypersplenism. Am J Surg 1982;144:700.
19. Cattau EL Jr, Benjamin SB, Knuff TE, Castell DO. The accuracy of the physical examination in the diagnosis of suspected ascites. JAMA 1982; 247:1164.
20. Missal Me, Robinson JA, Tatum RW. Inferior Vena Cava Obstruction: Clinical Manifestations, Diagnostic Methods, and Related Problems. Ann Intern Med 1965; 62:133.