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PLATELET COUNT/SPLEEN DIAMETER RATIO: A NON INVASIVE PARAMETER TO PREDICT PRESENCE OF ESOPHAGEAL VARICES IN ALCOHOLIC LIVER DISEASE

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Abstract:
Background: Upper gastrointestinal haemorrhage is one of the important complications of Alcoholic Liver Disease and a major cause of death in such patients**.** The endoscopic evaluation of EV among the patients of ALD is not devoid of potential harmful side effects. Its cost, need of expertise in performing the procedure, invasive nature and need to reduce the increased burden on endoscopic units demands development of non invasive predictive tools to identify esophageal varices among the patient of ALD**.** The platelet count to spleen diameter ratio, appears to be the best noninvasive predictor of EVs that has been developed so far. So, the present study was aimed at the evaluation of spectrum of endoscopic abnormalities among patients of Alcoholic Liver Disease and to devise an appropriate strategy for early timely and appropriate therapeutic intervention to reduce the mortality and morbidity in these patients.
Material and methods: A single centre, Prospective Observational Study was done on 97 patients with alcoholic liver disease attending medicine and emergency OPD and admitted in medical wards of Government Multispecialty Hospital Sector 16 Chandigarh during over a period of six months. Patients admitted with history of alcohol intake greater than 60 gms per day if male and 20 gms per day if female for > 10 years were included in the study. Ultrasonography of the abdomen was done to study the presence of different types of ultrasonographic features in Alcoholic Liver Disease patients. Statistical analysis was done using SPSS version 24.0.
Results: Out of 97 patients, 63 patients shows (64.94%) fatty liver of different grades. Among them Grade-I varices are seen in 7 patients (11.11%), Grade-II are seen in 4 patients (6.34%), Grade- III are seen in 3 patients (4.76%). Hepatitis was seen in 8 patients (8.25%) out of 97 patients. Among them Grade-III varices are seen in 4 patients (50%), cirrhotic and shrunken liver are seen in 23 patients (23.71%) out of 97 patients. Among them Grade-I varices are seen in 4 patients (17.39%), Grade-II varices are seen in 5 patients (21.73%), Grade-III varices are seen in 10 patients (43.47%). There was a significant correlation between fatty liver, hepatitis and cirrhosis with variceal grading. Out of 97 patients fatty liver of different grading was seen in 63 patients (64.94%). Among them none of them had showed cobble stone pattern. Hepatitis was seen in 8 patients (8.25%) among them cobble stone pattern seen in 2 patient (25%). Cirrhosis was seen in 23 patients (23.71%) among them 4 patients (17.39%) showed cobble stone pattern. There was a significant correlation between fatty liver, hepatitis & cirrhosis with PHG. Ous study showed the strong association between a low platelet count and large varices and deranged INR and variceal grading. Value of serum albumin for patients showed inverse relationship with increasing grade of varices. There is significant correlation between the Platelets count/ Splenic diameter and variceal grading.
Conclusion: Our Study concluded that clearly demonstrated the significance of study of the spectrum of endoscopic abnormalities in patients of Alcoholic liver disease. In relation to various prognostic factors which can be helpful in appropriate and early management of these individuals in future.

Keywords: Alcohol liver disease, platelets count, spleen diameter, oesophageal varices, etc

Introduction:

Alcoholic liver disease is a result of over of consuming alcohol that damages the liver, leading to a buildup of fats, inflammation, and scarring. It can be fatal. Alcohol is a leading cause of liver disease world wide and imposes the major socioeconomic burden on population. Prevalence of Alcoholic Liver Disease has been reported worldwide in various studies and its attributed to the quantity, duration and behavior of alcohol consumption.[1] Alcohol consumption has been prevalent among the population be it as an abuse or as social life style pattern. In India alcohol consumption has been steadily increasing. It has been estimated that there are 62.5 million alcohol users in India. The mean age of initiation of alcohol use has decreased from 23 yrs in 1950-1960 to 19 yrs in 1980-2000. This is due to changing social norms, urbanization, increased availability, high intensity marketing. In recent years the alarming increase in incidence of alcoholic related liver disorders among the Indian population has drawn the significance of addressing this issue in India.

However the quantity and duration of alcohol consumption as a relation with development of Alcoholic Liver Disease when associated with genetics, metabolism and other factors a significant correlation exists between per capita consumption and prevalence of cirrhosis. The studies have reported male and lower socioeconomic population

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preponderance. It has been observed that risk of developing cirrhosis increases with the ingestion of 60-80 g/day of alcohol for 10 years or longer in men, and 20 g/day in women.[1,2] Yet even drinking at these levels, only 6%-41% develop cirrhosis.

Jaurigne MM et al[3] reported that 20-30% of hospital admissions are directly or indirectly related to alcohol and among them 4-7% are because of Alcoholic Liver Disease. Alcoholic Liver Disease encompasses wide spectrum of abnormalities ranging from mild steatosis to frank cirrhosis[2]. When these patients land up in the cirrhotic phase it may lead to the advent of complications ranging from esophageal variceas, gastritis, peptic ulcers, portal hypertensive gastropathy, duodenitis, esophageal candidiasis and variceal bleeding.

Alcohol and its metabolites cause principal changes in hepatic parenchyma leading to steatosis, hepatitis and cirrhosis. Decompensated cirrhosis leads to frank ascites and other features of hepatocellular failure.[3] Among these principally the esophageal varices and gastric varices are known for the life threatening presentation among the patients of Alcoholic Liver Disease.

Cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, that leads to portal hypertension and end stage liver disease. Esophageal variceal hemorrhage is one of the most dreaded complications of cirrhosis of Liver and significant cause of mortality and morbidity.[4,5] The prevalence of varices in patients with cirrhosis is approximately 50%, and the risk of bleeding is 25-35%.[6] The grade of esophageal varices often correlates with the severity of liver disease.

Upper gastrointestinal endoscopy is the gold standard for the diagnosis of gastroesophageal varices.[7] However, the cost and invasive nature of endoscopic screening put a strong burden on medical resources, limits it's usefulness and associated with higher chances of non-compliance.[8] Moreover, less than 50% of cirrhotic patients exhibit varices at the time of screening endoscopy and majority of them have reported small-size varices with low risk of bleeding.[7] Furthermore, this facility may not be available in rural areas.

Upper gastrointestinal hemorrhage is one of the important complications of Alcoholic Liver Disease and a major cause of death in such patients, however research oriented limited data is available in this part of country regarding upper gastrointestinal profile of patients admitted with Alcoholic Liver Disease. Upper gastrointestinal endoscopy has been a tool to intervene as a primary prevention and secondary prevention of variceal bleeding by sclerotherapy and variceal ligation. Since Alcoholic Liver Disease is becoming not only as a major morbidity and mortality threat among alcoholics it also poses a huge socioeconomic burden especially due to the consumption among young and during their fruitful years of life.

Endoscopic screening of EV is currently recommended at time of diagnosis of cirrhosis in all patients and in patient of ALD and this endoscopy needs to be repeated at different intervals according to the clinical presentation of patient of ALD.[9] The prevalence of varices in patients with CLD is about 60-80% and the risk of bleeding is 25-35% depending upon severity of hepatic de-compensation.[10]

The endoscopic evaluation of EV among the patients of ALD is not devoid of potential harmful side effects. Its cost, need of expertise in performing the procedure, invasive nature and need to reduce the increased burden on endoscopic units demands development of non invasive predictive tools to identify esophageal varices among the patient of ALD.
Several attempts have been made to identify the parameters that can noninvasively predict the presence of EVs. Most studies have shown that platelet count and spleen diameter are directly or indirectly linked to the presence of EVs. The platelet count to spleen diameter ratio, proposed by Giannini et al[11], appears to be the best noninvasive predictor of EVs that has been developed so far. So, the present study is aimed at the evaluation of spectrum of endoscopic abnormalities among patients of Alcoholic Liver Disease and to devise an appropriate strategy for early timely and appropriate therapeutic intervention to reduce the mortality and morbidity in these patients.

Material & Methods:
A single centre, Prospective Observational Study was done on 97 patients with alcoholic liver disease attending medicine and emergency OPD and admitted in medical wards of Government Multispecialty Hospital Sector 16 Chandigarh during over a period of six months from 19.05.2019 to 19.11.2019.

Inclusion Criteria
- Patients admitted with history of alcohol intake greater than 60 gms per day if male and 20 gms per day if female for > 10 years.
- Clinical and diagnostic modalities suggestive of Alcoholic Liver Disease -e.g: hepatomegaly, jaundice, ascites, hepatic encephalopathy grade (0-1), splenomegaly, with or without peripheral stigmata of Chronic liver disease

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(gynaecomastia, parotid enlargement, duptyrens contracture, spider angiomas) and imaging studies suggestive of Alcoholic Liver Disease.
- Patients (or relatives-when patient is incapable) giving consent before enrolment.

Exclusion Criteria

- History of intake of hepatotoxic drugs (phenytoin,allopurinol, carbamazepine, hydralazine, oral contraceptive pills and androgens, tricyclic antidepressantss, chlorpromazine, flucloxacillin, amiodarone, methyl dopa).
- Viral Hepatitis and NASH (Non Alocholic Steatohepatitis).
- Autoimmune Hepatitis.
- Carcinoma with metastasis causing the deranged liver function.
- Patients refusing to give consent for the study.

All patients meeting inclusion and exclusion criteria were enrolled in the study after obtaining informed consent and they will be subjected to details of examination and they were proceed for the appropriate investigations and details were entered in the proforma designed for it. The enrolled individuals were diagnosed as per the lay down criteria. And the subjects were further subjected to biochemical investigation and Ultrasonographic examination for evaluation of Alcoholic Liver Disease using P5 GE Ultrasound machine. All the subjects under study were evaluated for any endoscopic abnormalities by Upper gastrointestinal endoscopy.

Upper gastrointestinal endoscopy was done using video endoscope (Olympus, GIF-V-70, Tokyo, Japan). For elective Esophagogastroduodenoscopy, patients were kept nothing per oral for at least 6 hours prior to the procedure. For urgent procedures, a prokinetic agent such as erythromycin 3mg/kg intravenously given over 30 minutes can help empty gastric contents, allowing for better visualization.

We took the patients in endoscopy room who were conscious and in case of a procedural complications like distress and all we have resuscitation tray to resuscitate the patient.

Method of data collection:
All patients included in the study were subjected to detailed history, clinical examination and blood investigations. All patients underwent biochemical tests, like liver function tests (serum bilirubin, ALT, AST, ALP, serum protein), complete blood counts (hemoglobin, total and differential count, platelet count), renal function tests (blood urea, serum creatinine), coagulogram. Tests for Hepatitis B surface antigen and anti- HCV antibody were also preformed in all patients in lab of GMSH-16.

Ultrasonography of the abdomen was done to study the presence of different types of ultrasonographic features in Alcoholic Liver Disease patients and we used the P5 GE Ultrasound Machine in GMSH -16. Chest X-ray and ECG were taken for all patients.

Upper Gastrointestinal endoscopy was done in all patients to note the different patterns of lesions in Alcoholic Liver Disease patients.

Statistical Analysis:
The statistical analysis was carried out using IBM SPSS (Statistical Package for Social Sciences) statistical version 20. All quantitative variables were estimated using measures of central location (mean and median) and measures of dispersion (standard deviation). All statistical tests were seen at two-tailed level of significance ($p \leq 0.01$ and $p \leq 0.05$).

Results:
Our study showed that maximum no. of patients (42.26%) was occurred in 46 – 55 yrs of age group. The clinical profile of patients was mostly pallor 55.67%, icterus 53.6%, parotid gland enlargement of Grade-I 43.3% and Grade-II 27.83%, dupytrens contracture 22.68%, facial puffiness 41.24% & pedal edema in 40.20%. The systemic examination of the subject showing the ascites with superficial dilated abdominal veins in 44 patients (45.36%), ascities clinically confirmed by shifting dullness, fluid thrill and on imaging studies and on CNS examination showing astrexis in 6 patients (6.18%) (table 1).

The ultrasonographic finding in Alcoholic Liver Disease in ultrasonographic of fatty liver of Grade-I shows increased echogenicity of liver in 19 patients (19.59%), Grade-II shows periportal echogenicity is absent in 39 patients (40.21%), Grade-III shows both periportal and diaphargamatic echogenicity is absent in 12 patients (12.36%). Steatohepatitis is seen in 8 patients (8.24%). Cirrhotic and shrunken liver with increased volume index of caudate lobe in 23 patients

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(23.71%) (table 2).

The UGI endoscopy of stomach and duodenum showing different type of lesions like gastritis 60 patients (61.85%), PHG with MLP in 16 patients (16.50%) and cobble stone pattern in 7 patients (7.21%), gastric ulcer in 2 patients (2.06%) and duodenitis 29 patients (29.89%) (table 3).

Out of 97 patients, 63 patients shows (64.94%) fatty liver of different grades. Among them Grade-I varices are seen in 7 patients (11.11%), Grade-II are seen in 4 patients (6.34%), Grade- III are seen in 3 patients (4.76%). Hepatitis was seen in 8 patients (8.25%) out of 97 patients. Among them Grade-III varices are seen in 4 patients (50%), cirrhotic and shrunken liver are seen in 23 patients (23.71%) out of 97 patients. Among them Grade-I varices are seen in 4 patients (17.39%), Grade-II varices are seen in 5 patients (21.73%), Grade-III varices are seen in 10 patients (43.47%). There was a significant correlation between fatty liver, hepatitis and cirrhosis with variceal grading (P<.0001***, P=0.0456* & P<0.0001*** respectively) (table 4).

Out of 97 patients fatty liver of different grading was seen in 63 patients (64.94%). Among them none of them had showed cobble stone pattern. Hepatitis was seen in 8 patients (8.25%) among them cobble stone pattern seen in 2 patient (25%). Cirrhosis was seen in 23 patients (23.71%) among them 4 patients (17.39%) showed cobble stone pattern. There was a significant correlation between fatty liver, hepatitis & cirrhosis with PHG (P<.003) (table 5).

In table no. 6 showed the strong association between a low platelet count and large varices (P=0.0147*) and deranged INR and variceal grading. (P=0.0146*). Value of serum albumin for patients showed inverse relationship with increasing grade of varices (P=0.0442*).There is significant correlation between the Platelets count/ Splenic diameter and variceal grading. (P=0.0211*).

Discussion:

Liver cirrhosis commonly leads to complications like portal hypertension. Cirrhotic patients with portal hypertension are at high risk for development of Esophageal varices (EV). EV hemorrhage is serious life threatening condition and major cause of mortality and morbidity.[4,5] The grade of EV often correlates with the severity of liver disease. More advanced the liver disease more are the chances of presence of EV. Though upper gastrointestinal endoscopy is one of the best tools for the diagnosis of gastroesophageal varices, the cost and invasive nature of endoscopic screening limit its usefulness.[7,8] Previous studies have shown that low platelet count, splenomegaly, platelet count spleen diameter ratio, advanced Child-Pugh class, low serum albumin and high portal vein diameter may be useful non-invasive predictors of esophageal varices for patients with cirrhosis and reduce the need for screening endoscopy.[12,13] In this scenario, we planned to evaluate the value of platelet count to spleen diameter ratio as a noninvasive parameter for predicting esophageal varices (EVs) in liver cirrhosis.

Our study showed that the age of presentation of Alcoholic Liver Disease and the maximum no. of patients 41 (42.26%) were occurred in 46 – 55 yrs of age group. Waqas Wahid Baig et al (2008)[14] found that the mean age of alcoholic was 51 years (range 20 to 80 years). Another study by Mukherjee PS et al[1] a multi centric study showed the median age of presentation of Alcoholic Liver Disease to be is 43 years and they were predominantly males.

A study by Yalamanchi RP et al[15] on cirrhotic patients showed a prevalence of 94.73% to have esophageal varices, 23.68% found to have Portal Hypertensive Gastropathy and Akere A, Akanda O et al[16] showed a prevalence of esophageal varices to be 96.4% in cirrhosis and other lesions of esophagus apart from varices like candidiasis was present in 8.9%, esophageal erosions in 7.1%, esophageal carcinoma in 3.1%, Portal Hypertensive Gastropathy in 80.4%, gastric mucosal erosions in 12.5%, gastric ulcer in 10.7% and duodenits in 31.1%. In our study we included the full spectrum of Alcoholic Liver Disease where fatty liver, hepatitis and cirrhosis were taken into consideration and the prevalence of varices was 38.14%.

Our study showed that the child Pugh Score, Score A in 19 patients (19.58%), Score B in 7 patients (7.21%), Score C in 18 patients (18.55%). Waqas Wahid Baig et al (2008)[14] found that out of 150, 97 were Child- Pugh class A (64.7%), 32 were class B (21.3%) and 21 were class C (14%).

Out of 97 patients fatty liver of different grading was seen in 63 patients (64.94%), among them none of them had showed cobble stone pattern, hepatitis was seen in 8 patients (8.25%) among them cobble stone pattern seen in 2 patient (25%) and cirrhosis was seen in 23 patients (23.71%) among them 4 patients (17.39%) showed cobble stone pattern. There was a significant correlation between fatty liver, hepatitis & cirrhosis with PHG (P<.003). Sarin SK, et al[17] in an Indian study reported PHG developing after variceal eradications is often transitory and less severe. If PHG is pre existing, endoscopic therapy for varices could worsen the PHG, with a likelihood of bleeding and such patients may be benefited by concomitant beta blocker therapy.

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Platelet Count predicting Oesophageal Varices:

Out of the 97 patients, 22 patients (59.45%) had a platelet count of less than 1 lakh out of them which 13 patients (81.25%) had Grade-III varices, 6 patients (54.54%) had Grade II and 3 patients (30%) with Grade-I varices. 13 patients (35.13%) had platelets count between 1-1.5 Lakhs among them Grade-III varices in 3 patients (18.75%), Grade- II in 3 patients (27.27%), Grade-I varices in 7 patients (70%) and with platelet count 1.5-2 lakh none of them had Grade-III varices, 2 patient (5.40 %) with Grade-II varices and no patient had Grade-I varices. The above observations suggested a strong association between a low platelet count and large size of esophageal varices (P=0.0147*).

Garcia- Tsao et al[18] (180 patients), Pilette et al[19] (116 patients) and K.Thomopoulos et al[7] (184 patients) reported a low platelet count to be an independent risk factor for the presence of varices. Mohammad Khuram et al[20] (200 patients) found esophageal varices in 146 with 121 having thrombocytopenia (94.5%). Chalasani et al[21] found that out of 346 patients, the presence of splenomegaly on physical examination (OR, 2.0; 95% CI, 1.1-3.8) and a platelet count less than 88103/μL (OR, 1.6; 95% CI, 1.0- 3.0) were independent risk factors for the presence of large varices.

INR predicting Oesophageal Varices:
Out of 97 patients INR more than 1.7 was seen in 29 patients (78.38%) among them Grade-III varices seen in 9 patients (56.25%), Grade-II varices in 11 patients (100%) and Grade-I varices in 9 patient (90%) and in patients with INR less than 1.7, 8 patients (21.62%) had Grade-III varices in 7 patients (43.75%), Grade-I varices in 1 patient (10%). There is significant correlation between the deranged INR and variceal grading. (P=0.0146*). A study done by Schepis F et al[22] reported that the presence of esophageal varices was independently predicted by prothrombin activity less than 70% (odds ratio [OR]: 5.83; 95% CI: 2.6-12.8). In a study by Pilette et al[19] in a study of 116 patients with cirrhosis, a low platelet count, high prothrombin time, and the presence of spider angiomata were independent risk factors for the presence of varices.

Serum Albumin and Oesophageal Varices:
In our sample with 97 patients,25 patients (67.56%) had their serum albumin less than 3g/dl, out of which 13 patients (81.25%) had Grade-III varices, 9 patients (81.82%) had Grade-II varices and 3 patients (30%) had Grade-I varices. 11 patients (29.72%) had their serum albumin between 3-3.5 among them Grade III varices were seen in 3 patients (18.75%), Grade-II varices were seen in 2 patients (18.18%), Grade-I varices in 6 patients (60%). 1 patients (2.70%) had their serum albumin more than 3 among them Grade-I varices seen in 1 patients (10%). Value of serum albumin for patients showed inverse relationship with increasing grade of varices (P=0.0442*). Value of serum albumin for patients showed inverse relationship with increasing grade of varices. In a logistic regression study by Garcia-Tsao et al[18] of 180 patients, the presence of spider angiomata, a low albumin level, and a low platelet count were independent risk factors for the presence of varices.

Platelets count/ Splenic diameter with variceal grading:
Out of 97 patients Platelets count/ Splenic diameter of less than 1000 was seen in 34 patients (91.89%) among them Grade-III varices seen in 16 patients (100%), Grade-II varices 8 patients (72.72%) and Grade-I varices in 10 patient (100%) and more than 1000, 3 patients (8.11%) had Grade-II varices in 3 patients (27.28%).There is significant correlation between the Platelets count/ Splenic diameter and variceal grading. (P=0.0211*).

Waqas Wahid Baig et al (2008)[14] found three parameters such as platelet count, spleen diameter and platelet count to spleen diameter ratio were significantly different between the two groups of patients with and without EVs. However, the platelet count to spleen diameter ratio was the only parameter with the highest accuracy for identifying the presence of EVs in cirrhosis patients; it was consistently associated with the presence or absence of EVs (the area under the ROC curve was 0.942 [95% CI 0.890 to 0.995]).

Table 1: *Profile of ALD patients*

Parameters	Frequency	Percentage
	Age (yrs)	
25-35	19	19.58%
36-45	23	23.72%
46-55	41	42.26%

56-65		14	14.24%
Total		97	100%
		Clinical profile	
Pallor		54	55.67%
Icterus		52	53.60%
Parotid enlargement	Grade I	42	43.30%
	Grad II	27	27.83%
Duputyrens contracture		22	22.68%
Facial Puffiness		40	41.24%
Pedal edema		39	40.20%
		Systemic examination	
Ascites superficial dilated abdominal veins		44	45.36%
Astrexis		6	6.18%

Table 2: Ultrasonography showing the spectrum of ALD

Variables		**Frequency**	**Percentage**
Normal		27	27.84%
Fatty liver	Grade I	19	19.59%
	Grade II	39	40.21%
	Grade III	12	12.36%
Steatohepatitis		8	8.24%
Cirrhosis		23	23.71%

Table 3: UGI endoscopy showing different types of lesions in stomach and duodenum

Variables		**Frequency**	**Percentage**
Gastritis		60	61.85%
PHG	MLP	16	16.50%
	Cobble stone	7	7.21%
Gastric ulcer		2	2.06%
Duodenitis		29	29.89%

Table 4: Esophageal varices studied with respect to ultrasonographic findings in ALD patients

	Varices										**Chi-square**	**P-value**
	None		Grade I		Grade II		Grade III		Total			
	No.	%	No.	%	No.	%	No.	%	No.	%		

Fatty liver	Absent	11	32.35 %	3	8.82%	7	20.58 %	13	38.23 %	34	35.05 %	26.43	<0.0001**
	Present	49	77.77 %	7	11.11 %	4	6.34%	3	4.76%	63	64.94 %		
Hepatitis	Absent	56	62.92 %	10	11.23 %	11	12.35 %	12	13.48 %	89	91.75 %	8.020	0.0456*
	Present	4	50%	0	0%	0	0%	4	50%	8	8.25 %		
Cirrhosis	Absent	56	75.67 %	6	8.10%	6	8.10%	6	8.10%	74	76.28 %	27.29	<0.0001**
	Present	4	17.39 %	4	17.39 %	5	21.73 %	10	43.47 %	23	23.71 %		

Table 3: ***PHG studied with respect to ultrasonographic findings***

		PHG (Cobble stone appearance)						Chi-square	P-value
		Absent		Present		Total			
		No.	%	No.	%	No.	%		
Fatty liver	Absent	30	88.23%	4	11.76 %	34	35.05%	7.731	0.0054**
	Present	63	100%	0	0%	63	64.94%		
Hepatitis	Absent	85	95.50%	4	4.50%	89	91.75%	5.319	0.0211*
	Present	6	75%	2	25%	8	8.25%		
Cirrhosis	Absent	73	98.64%	1	1.35%	74	76.28%	9.234	0.0024**
	Present	19	82.60%	4	17.39 %	23	23.71%		

Table 12: Relationship of biochemical parameters with esophageal varices

Biochemical parameters		Varices			Total	Chi-Square	P-value
		Grade I (N=10)	Grade II (N=11)	Grade III (N=16)			
Platelet Counts	Less than 1 lakhs	3	6	13	22	12.39	0.0147*
		30%	54.54%	81.25%	59.45%		
	1-1.5 lakhs	7	3	3	13		
		70%	27.27%	18.75%	35.13%		
	1.5-2.0 lakhs	0	2	0	2		
		0%	18.18%	0%	5.40%		
INR	<1.7	1	0	7	8	8.455	0.0146*
		10%	0%	43.75%	21.62%		
		9	11	9	29		

	>1.7	90%	100%	56.25%	78.38%		
Hypoalbumenia	<3	3	9	13	25	9.787	0.0442*
		30%	81.82%	81.25%	67.56%		
	3 to 3.5	6	2	3	11		
		60%	18.18%	18.75%	29.72%		
	>3.5	1	0	0	1		
		10%	0%	0%	2.70%		
Platelets count/ Spleni diameter	<1000	10	8	16	34	7.717	0.0211*
		100%	72.72%	100%	91.89 %		
	>1000	0	3	0	3		
		0%	27.28%	0%	8.11%		

Conclusion:

We concluded that clearly demonstrated the significance of study of the spectrum of endoscopic abnormalities in patients of Alcoholic liver disease. In relation to various prognostic factors which can be helpful in appropriate and early management of these individuals in future.

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