

Endoscopic Screening of Esophageal Varices in Asymptomatic HCV Infected Patients: A Single Center Study

Tauqeer Ahmad, Rabia Sadiq, Muhammad Naeem Afzal, Masood Ahmad

ABSTRACT

Background: Varices are a major complication of HCV induced cirrhosis. AASLD recommend upper GI endoscopy in all cirrhotic patients to screen for esophageal varices in all cirrhotic patients irrespective of severity of disease.

Objective: To determine the frequency of esophageal varices in apparently asymptomatic patients with cirrhosis due to chronic hepatitis C presenting at tertiary care hospital at Sialkot.

Material & Methods: This descriptive cross sectional study was conducted in Allama Iqbal memorial teaching hospital Sialkot from January to December 2017. We studied 261 cirrhotic patients due to HCV who never had an upper GI bleed in past and subjected them to upper GI endoscopy for screening for esophageal varices. All patients were stratified according to their Child-Pugh class. Frequency of esophageal varices was calculated as percentage and compared between three Child classes by Chi-square test.

Results: Mean age of our population was 44.9±16.2 years. Almost 70% of cirrhotic patients who never had upper GI bleed had varices on screening endoscopy. Out of 261 patients, 59 patients (22.6%) had large and moderate sized varices that deserved banding. Frequency of high grade esophageal varices was higher with advancing Child-Pugh class. 9% in Child class A, 18% in class B, and 30% in class C had moderate to large sized varices that deserved banding. Surprisingly, there were 22 patients (16.6%) in Child class C who had no esophageal varices at all.

Conclusion: Upper GI endoscopy should be essentially performed in all cirrhotic patients even without history of upper GI bleeding.

Key words: Endoscopic screening, esophageal varices, HCV

This article may be cited as: Ahmad T, Sadiq R, Afzal NM, Ahmad M.

Endoscopic screening of Esophageal varices in asymptomatic HCV infected patients: A single centre study. JSMC 2019;9(1)67-70.

INTRODUCTION

Chronic liver disease leading to cirrhosis is a big health hazard in Pakistan, making a huge burden on our health economics. According to a recent review of available data from Pakistan, HCV is the most frequent etiology of liver disease in patients presenting to healthcare setups with decompensated liver disease. Although overall prevalence of HCV in Pakistani population is 4.8%, but the same in apparently healthy persons ranges from 0.19% to 22.2% as reported by different studies from various areas of the country.¹ All these apparently healthy patients, if left untreated or get a delay in treatment, are likely to develop cirrhosis and related complications in due course of time.

Variceal bleeding is one major complication of cirrhosis that can occur in conjunction with other events or decompensation or even in isolation during the course of disease. This is so important that mere presence of varices, and occurrence of variceal bleed has been assigned separate stages of disease (stage 2 and 3 respectively) in

Sequence of decompensation in a prospectively established prognostic model of staging of chronic liver disease.² American Association for Study of Liver Disease AASLD recommends that every patient who's assigned with diagnosis of cirrhosis must be screened for presence of clinically significant portal hypertension within one year of diagnosis. Although non-invasive tools (like liver stiffness measurement) may be a surrogate for presence of clinically significant portal hypertension, yet if these tools are not available, upper GI screening should be done in all patients diagnosed with cirrhosis irrespective of presence of signs of decompensation.³ A report from US veteran clinic showed that guideline for surveillance endoscopy was followed only in one third of patients fulfilling the criteria. This led to missed opportunity to treat a potentially life threatening condition that can be fatal as well if not treated in time.⁴ In a large prospective study of 495 patients with diagnosis of cirrhosis followed up for 25 years, esophageal varices were present in 61% overall population, while it was present in 59% of those patients who were categorized as compensated by Child-Pugh classification system. In this prospective survival analysis over 20 years, patients in stage 2 that merely had varices without history of bleeding had a significantly increased risk of death (19% vs 10%),

.....
Khawaja Muhammad Safdar Medical College, Sialkot
.....

*Correspondence: Muhammad Naeem Afzal
Associate Professor, Medicine,
Khawaja Muhammad Safdar Medical College,
Sialkot, Pakistan. Email: dr_mnal@yahoo.com*

Received: October 17th 2018, Accepted: April 03rd 2019

bleeding (22% vs 7%) and development of ascites (33% vs 20%) than stage 1 patients.⁵ Another study from national endoscopic database registry in USA stated 52.2% frequency of esophageal varices in patients undergoing screening for varices. The size of varices was larger in Child-Pugh class B and C, but still a sizable portion of Child class A patients (42.7%) patients also had esophageal varices.⁶ Various studies from Pakistan have looked into frequency of esophageal varices in cirrhotic patients presenting with upper GI bleed. One study from Ayub teaching hospital Abbottabad reported that among known cirrhotic patients who presented with upper GI bleeding, the frequency of esophageal varices as 92% (234/252 patients).⁷ Another study from Sindh reported 35% frequency of esophageal varices in 88 cirrhotic patients already having ascites but no past history of upper or lower GI bleeding in past. The severity grade of varices increased with worsening Child-Pugh score; however the study had small sample size.⁸ Another study from Karachi reported 88% frequency of esophageal varices in mix population of cirrhosis presenting with or without upper GI bleeding. Grade of varices correlated directly with severity of portal hypertensive gastropathy.⁹

Given the above data, it is known that esophageal varices are present in those cirrhotic patients who present with upper GI bleed; however, the data from Pakistan regarding asymptomatic patients is inadequate due to deficient sample size or mix population selected for upper GI endoscopy. We therefore planned this cross sectional descriptive study to calculate the frequency of esophageal varices in apparently asymptomatic patients with cirrhosis due to chronic hepatitis C presenting at tertiary care hospital at Sialkot. Secondary objective was to analyze the presence of varices in subgroups according to Child-Pugh classification.

MATERIAL AND METHODS

After getting ethical approval from departmental review committee, this descriptive cross sectional study was conducted in Allama Iqbal memorial teaching hospital Sialkot from January to December 2017. Sample size of 261 patients was calculated based on 95% confident interval, 5% margin of error and 44% expected proportion of population. Patients with chronic hepatitis C, as evidenced by positive anti-HCV antibodies by ELISA, or HCV RNA by PCR, and cirrhosis

documented on ultrasound were included in study by non-probability convenience sampling technique and after signed informed consent for participation in study. Patients with cirrhosis due to other causes, unfit or unwilling for upper GI endoscopy or who already had a bleeding episode were excluded from study. Information from history, review of medical record and relevant recent investigations were collected on a pre-designed proforma for calculation of Child-Pugh class of each patient. Patients were requested to come for upper GI endoscopy on assigned day (within one week of outpatient check-up) empty stomach for at least 8 hours prior to given time. Endoscopy of each patient was done under local anesthesia (and light sedation wherever needed), using Olympus model GIF 170 endoscope in morning hours of the day, after fulfilling recommended sterilization techniques. The endoscopist was kept blind from Child-Pugh class of the patient. Esophageal varices were categorized as small, medium and large according to the assessment of endoscopist. Band ligation of esophageal varices was done where indicated. Patient was periodically examined during and after endoscopy, and then discharged and referred to outpatient department for deserved treatment. All data were entered and analyzed with SPSS 20. A p-value <0.05 was taken as significant during subgroup analysis.

RESULTS

The baseline characteristics of study population are shown in Table 1. Mean age of all patients was 44.9±16.2 years. Almost 70% of cirrhotic patients who never had upper GI bleed had varices had esophageal varices on screening endoscopy. Mean age of those who had varices (n=79) was statistically not different from those who did not have varices (n=182) (44.86±16.1 vs 45±16.2, p-value 0.94). Age was also similar in males and females. Frequency of high grade esophageal varices was higher with advancing Child-Pugh class. The difference was statistically more significant in females. Out of 261 patients, 59 patients (22.6%) had large and moderate sized varices that deserved banding. Out of 53 cases in Child class A, 15 patients had varices (28%) and 5 patients (9.4%) had moderate sized varices that deserved banding. Similarly, 57(75%) patients of

Table 1: Distribution of cases by clinical variables (n=261)

	Overall (n=261)	Males (n=116)	Females (n=145)
Age in years (mean \pm SD)	44.9 \pm 16.2	44.9 \pm 15	44.9 \pm 17
Child-Class (A/B/C)	53/76/132	27/40/49	26/36/83
Esophageal Varices	182 (69.7%)	81 (69.8%)	102 (70.3%)
Variceal grade (Small/Medium/Large)	123/39/20	55/20/5	68/19/15

Table 2: Comparison of variceal grade in each CTP class (No, small, moderate, large)

	Child class A (n=53)	Child class B (n=76)	Child class C (n=132)	p-value
Overall (261)	38/10/5/0	19/43/13/1	22/70/21/19	0.000
Males (116)	16/9/2/0	11/20/8/1	9/26/10/4	0.012
Females (145)	22/1/3/0	8/23/5/0	13/44/11/15	0.000

Child class B had varices while 14/76 (18.4%) patients, and 40/132 (30.3%) in Child class C deserved banding. Comparison of severity of variceal grades was statistically significant between three Child-Pugh classes, both overall and in males and females separately. (Table 2) Surprisingly, there were 22 patients (16.6%) in Child class C who had no esophageal varices at all.

DISCUSSION

Our study was the first one in Pakistan to estimate the frequency of esophageal varices in those cirrhotic patients in Pakistan who are picked up by the physician asymptotically. The estimated frequency (69.7%) was in agreement to available international evidence although it was higher than cited in international literature.^{5,6} The study reported from Abbottabad reports very high frequency (93%) of esophageal varices.⁷ This is in contrast to results but it must be kept in mind that the other study included all cirrhotic patients who presented with upper gastrointestinal bleed. Moreover, all patients were >50 years of age, while average of patients in our study was 45 years, and patients who had varices or not were having almost similar age.

The results of our study that frequency and severity of varices increase with Child-Pugh class are in accordance with international⁶ and national literature.⁸ Our results that a sizable frequency of Child class A patients also have varices is in accordance with data of large scale registry, although frequency of varices (9.4%) in our study was is much lower than reported (42%) in their registry.⁶ The reason might be inadequate screening policies in our population. Our healthcare system is mostly based on self-referral in case of symptoms, and it is very uncommon for people to present in OPD in asymptomatic conditions. If we screen all patients with chronic hepatitis C with cirrhosis like in US national

endoscopic registry, we might detect even higher number of patients with esophageal varices. As evident by 25 years long follow-up study that reveals that Child-Pugh class A patients also have significant risk of bleeding (7%) and death (10%) before they proceed to next stage of liver diver disease.⁵

One factor in progression of HCV is its genotype, and especially genotype 3 is associated with rapid progression of disease.¹⁰ We could not assess genotype in our patients, but that as genotype 3 is responsible for two thirds (67%) of HCV infection in Punjab,¹¹ we assume that same would've been in our study population. However, it will be interesting to see if there's any difference of clinically significant portal hypertension between different HCV genotypes.

Results of our study strengthens the recommendation by AASLD that every cirrhotic patient must undergo non-invasive (liver stiffness measurement) or invasive test (hepatic venous pressure gradient or upper GI endoscopy for screening of clinically significant portal hypertension.³ As non-invasive liver stiffness testing is neither routinely available in our setup and it is costly in private setup, we suggest that upper GI endoscopy must routinely be performed for screening of esophageal varices and ruling out clinically significant portal hypertension. We further emphasize that, patients with compensated cirrhosis in Child class A must not be ignored from screening for clinically significant portal hypertension, either by non-invasive testing or by upper GI endoscopy. However, keeping in mind the constraint of resources in public sector hospitals, those patients who are in advance cirrhosis may be given earlier appointment and those in Child class A may be adjusted on a few months appointment in order to screen them within one year of diagnosis.

CONCLUSION

Upper GI endoscopy should be essentially performed in all cirrhotic patients even without history of upper GI bleeding.

Funding/Support: The study was self-supported financially.

Conflict of interest: The authors declare that there is no conflict of interests.

REFERENCES

1. Butt AS, Sharif F. Viral Hepatitis in Pakistan: Past, Present, and Future. *Euroasian J Hepatogastroenterol*. 2016;6(1):70-81.
2. D'Amico G. Stages Classification of Cirrhosis: Where Do We Stand? In: Roberto DF, editor. *Portal Hypertension V*. 5th ed. New Delhi, India: Wiley-Blackwell; 2011. p. 132-9.
3. Garcia-Tsao G, Abraldes JG, Berzigotti A, Bosch J. Portal hypertensive bleeding in cirrhosis: Risk stratification, diagnosis, and management: 2016 practice guidance by the American Association for the study of liver diseases. *Hepatology*. 2017;65(1):310-35.
4. Flemming JA, Saxena V, Shen H, Terrault NA, Rongey C. Facility- and Patient-Level Factors Associated with Esophageal Variceal Screening in the USA. *Dig Dis Sci*. 2016;61(1):62-9.
5. D'Amico G, Pasta L, Morabito A, D'Amico M, Caltagirone M, Malizia G, et al. Competing risks and prognostic stages of cirrhosis: a 25-year inception cohort study of 494 patients. *Aliment Pharmacol Ther*. 2014;39(10):1180-93.
6. Kovalak M, Lake J, Mattek N, Eisen G, Lieberman D, Zaman A. Endoscopic screening for varices in cirrhotic patients: data from a national endoscopic database. *Gastrointest Endosc*. 2007;65(1):82-8.
7. Hadayat R, Jehangiri AUR, Gul R, Khan AN, Said K, Gandapur A. Endoscopic findings of upper gastrointestinal bleeding in patients with liver cirrhosis. *J Ayub Med Coll Abbottabad*. 2015;27(2):391-4.
8. Soomro MA, Ansari IA, Abdro GY, Shah SAA, Shah SSR. Prediction of large esophageal varices in patients with decompensated cirrhosis by Child-Pugh score, in Medical unit II, Chandka medical college hospital, Larkana. *Med Forum*. 2014;25(1):31-5.
9. Abbasi A, Bhutto AR, Butt N, Munir SM, Dhillon AK. Frequency of portal hypertensive gastropathy and its relationship with biochemical, haematological and endoscopic features in cirrhosis. *J Coll Physicians Surg Pak*. 2011;21(12):723-6.
10. Kanwal F, Kramer JR, Ilyas J, Duan Z, El-Serag HB. HCV genotype 3 is associated with an increased risk of cirrhosis and hepatocellular cancer in a national sample of U.S. Veterans with HCV. *Hepatology*. 2014;60(1):98-105.
11. Umer M, Iqbal M. Hepatitis C virus prevalence and genotype distribution in Pakistan: Comprehensive review of recent data. *World J Gastroenterol*. 2016;22(4):1684-700.
12. Health Department. *Healthcare programs: Prevention and Control of Hepatitis*. Lahore: Government of The Punjab; 2018 [cited 2018 7 Jan 2018]. Available from: http://health.punjab.gov.pk/Prevention_and_Control_of_Hepatitis