

Comparison of endoscopic findings in patients from different ethnic groups undergoing endoscopy for upper gastrointestinal bleed in eastern Nepal

Jaya Bhattarai, Pramod Acharya, Bipin Barun, Shashank Pokharel, Neeraj Uprety and Nabin Kumar Shrestha*

Department of Internal Medicine, B. P. Koirala Institute of Health Sciences

*Now at the Cleveland Clinic, Cleveland, OH, USA

Corresponding author: Nabin K. Shrestha, MD, MPH, FACP, FIDSA, Department of Infectious Diseases, Cleveland Clinic, 9500 Euclid Avenue / S-32, Cleveland, OH 44195, USA. e-mail: shrestn@ccf.org

ABSTRACT

Upper gastrointestinal (UGI) bleed is one of the commonest medical emergencies. Cultural customs and practices may influence the development of disease conditions that may lead to UGI bleed. The purpose of this study was to compare the causes of UGI bleed in different ethnic groups among patients presenting to a large tertiary care hospital with acute UGI bleed. A retrospective study was conducted examining data available in the endoscopy register at the B. P. Koirala Institute of Health Sciences (BPKIHS) in Nepal for patients presenting with UGI bleed over one calendar year. Study subjects were categorized into one of a few broad categories of ethnic groups: Khas, Newar, SeTaMaGuRaLi, Maithali and others. Demographic information and endoscopic diagnoses were abstracted. The relative frequencies of different causes of UGI bleed were compared across the ethnic groups using the χ^2 test. One hundred and eighty-nine patients underwent endoscopy for UGI bleed in the time period studied. The mean age of the study cohort was 49.6 years and consisted of 71.0% males and 29.0% females. Overall the commonest cause of upper GI bleed was gastric ulcer. Esophageal varices was the commonest cause in the SeTaMaGuRaLi group, accounting for 33.3%. The relative frequency of esophageal varices as the cause of upper GI bleed was statistically significantly different among the various ethnic groups, with the SeTaMaGuRaLi group having the highest relative frequency (p-value 0.02). Physicians taking care of patients with upper GI bleed in Nepal should be aware of the high relative frequency of esophageal varices as a cause of upper GI bleed, and especially so among certain ethnic groups.

Keywords: Upper gastrointestinal bleed (UGI bleed), endoscopy, ethnic groups.

INTRODUCTION

Upper gastrointestinal (UGI) bleed is one of the important medical emergencies worldwide, accounting for high morbidity and mortality.¹⁻³ Endoscopy is pivotal in the diagnosis and management of UGI bleed. Endoscopic findings dictate the specific remedial measures necessary to control the bleeding.

Differences in cultural practices in different regions of the world could influence the development of UGI bleed. Thus the causes of UGI bleed in studies conducted in western countries may not accurately reflect the causes of UGI bleed in the population of Nepal. Furthermore, the Nepalese population consists of a heterogeneous collection of people of different ethnic backgrounds with different cultural practices, some of which may markedly affect the likelihood of development of illnesses that might cause UGI bleed. The population of Nepal consists of at least 103 distinct ethnic groups, according to the 2001 Census.⁴ There are similarities of customs and practices amongst different groups allowing broad categorization into five large groups, namely: Khas (Brahmin, Chettri, and Thakuri), Newar, Maithali (including Yadavs, Tharu, Rajbansi, Dhimal, Maji), *SeTaMaGuRaLi* (Sherpa, Tamang, Magar, Gurung, Rai and Limbu) and others.

The purpose of this study was to describe the causes of UGI bleed in the population of eastern Nepal as revealed by endoscopy among patients undergoing the procedure for UGI bleed, and to compare the causes of UGI bleed among different ethnic groups.

MATERIALS AND METHODS

A retrospective cohort study was conducted, including all patients who underwent UGI endoscopy at BPKIHS for UGI bleed from April 13th 2004 to April 12th 2005 (which corresponds to the calendar year 2061 in the Nepalese calendar). UGI bleed was defined as the presence of any one of the following: 1) hematemesis 2) melena 3) nasogastric aspirate of blood.⁵

Patients were identified by review of the endoscopy register in the endoscopy suite at BPKIHS where all endoscopies are done. Results of endoscopic findings were abstracted from the endoscopy register where results of all endoscopies are recorded. All endoscopies were done by one of three physicians. Endoscopic diagnosis was made according to widely accepted criteria.

Demographic characteristics of age, gender and ethnic background for the study sample subjects were obtained from the information recorded in the endoscopy register. The distributions of age, gender and ethnic background in the study sample were determined.

The relative proportions of different causes of UGI bleed were derived from the collected data. The relative frequencies of different causes of UGI bleed in people of different ethnic groups were compared using the chi-square (χ^2) test. A p-value of 0.05 was considered statistically significant.

RESULTS

One hundred and eighty-nine patients underwent UGI endoscopy at BPKIHS for UGI bleed in the time period studied. Endoscopic diagnoses were available for all patients and no patients were excluded.

The mean age of the study cohort was 49.6 years. The sample consisted of 134 males (71.0%) and 55 females (29.0%). All study patients fell into the first four groups, with the "other" category becoming redundant for the purpose of this study. The overall causes of UGI bleed are outlined in Table-1. Gastric ulcer was the most common cause overall.

There were differences in relative frequencies of different causes of UGI bleed when comparing persons from different ethnic backgrounds. Gastric ulcer was the most common cause in all groups except in the *SeTaMaGuRaLi* group in which esophageal varices was the most common cause. Table-2 compares the relative frequencies of different causes of UGI bleed in patients from different ethnic backgrounds. The relative frequency was significantly different across the groups only for esophageal varices, with the *SeTaMaGuRaLi* group having the highest relative frequency, with 33.3% of UGI bleed accounted for by esophageal varices in that group.

DISCUSSION

Nepal is a country with a large number of ethnic groups. Each ethnic group has its own unique lifestyle and cultural practices. Some of these practices such as consumption of larger amounts of alcohol may influence the development of alcoholic liver disease with its attendant complications of portal hypertension and consequent esophageal variceal bleeding.

In our study the commonest cause of UGI bleed was found to be gastric ulcer, with gastritis and esophageal varices close behind. In general, studies in different populations have shown that peptic ulcers and gastric erosions are the commonest causes of UGI bleed.⁶⁻⁹ However, esophageal varices was seen more frequently in our study compared with the other reported studies. Esophageal varices have been shown to be an important cause of UGI bleed in populations with previous evidence of portal hypertension.¹⁰ Among the various ethnic groups in our study, the relative frequency of esophageal varices as the cause of upper GI bleed was statistically significantly different among the various ethnic groups, with the *SeTaMaGuRaLi* group having the highest relative frequency. The question of whether this is because of their cultural practices or because of genetic factors cannot be answered by this study. The reason could be due to the differences in lifestyle and cultural practices, especially greater use of alcohol in their culture with attendant higher risk of development of alcoholic liver disease and portal hypertension. Portal hypertension is the major cause of esophageal varices. Alcoholic liver disease is one of the commonest causes of portal hypertension.

Our study is limited by its small size. However, this modest effort in the setting of limited resources does provide local and relevant information that should be useful to practicing physicians in Nepal. Physicians taking care of patients with upper GI bleed in Nepal should be aware of the high relative frequency of esophageal varices as a cause of upper GI bleed, and especially so among certain ethnic groups.

ACKNOWLEDGEMENTS

We would like to thank Dr. Matrika Regmi, Dr. Jawaid Ansari for all their help.

REFERENCES

1. Silverstein FE, Gilbert DA, Tedesco FJ *et al.* The national ASGE survey on upper gastrointestinal bleeding. I. Study design and baseline data. *Gastrointest Endosc* 1981; 27: 73-9.
2. Larson DE, Farnell, MB. Upper gastrointestinal hemorrhage. *Mayo Clin Proc* 1983; 58: 371-87.
3. Allan R, Dykes P. A study of the factors influencing mortality rates from gastrointestinal hemorrhage. *Queensland J Med* 1976; 180: 533-50.
4. Central Intelligence Agency. CIA World Factbook, Nepal Demographics Profile 2007. <https://www.cia.gov/library/publications/the-world-factbook/geos/np.html>.
5. Khurram M, Khaar HT, Hassan Z *et al.* A 12 years audit of upper gastrointestinal endoscopic procedures. *J Coll Physician Surg Pak* 2003 june 13 321-4
6. Zaltman C, de Souza HSP, Castro MEC, Sobral MDF, Dias PCP, Lemos Jr, V. Upper gastrointestinal bleeding in a Brazilian hospital: a retrospective study of endoscopic records. *Arq Gastroenterol* 2002; 39: 74-80.
7. Gilbert DA, Silverstein FE, Tedesco FJ. The national ASGE survey on upper gastrointestinal bleeding. III. Endoscopy in upper gastrointestinal bleeding. *Gastrointest Endosc* 1981; 27: 94-102.
8. Morgan AG, MacAdam WA, Walmsley GL, Jessop A, Horrocks JC, de Dombal FT. Clinical findings, early endoscopy and multivariate analysis in patients bleeding from the upper gastrointestinal tract. *Brit Med J* 1977; 2: 237-40.
9. Rockall TA, Logan RF, Devlin HB, Northfield TC. Incidence of and mortality from acute upper gastrointestinal hemorrhage in the United Kingdom. *Brit Med J* 1995; 311: 222-6.
10. Sutton FM. Upper gastrointestinal bleeding in patients with esophageal varices. What is the most common source? *Amer J Med* 1987; 83: 273-5.

Table-1: Causes with relative frequencies of UGI bleed in patients undergoing UGI endoscopy for bleeding in eastern Nepal

Cause	Relative frequency (%)
Duodenal ulcer	13.6
Gastric ulcer	24.1
Esophageal varices	21.6
Fundal varices	1.6
Gastritis	23.0
Duodenitis	4.7
Esophageal erosions / ulcers	4.6
Mallory-Weiss tears	5.2
Growth	1.6

Table-2: Comparison of causes of UGI bleed in persons of different ethnic backgrounds

Condition	Relative frequencies (%)				p-value ¹
	Khas (n=64)	Newar (n=12)	Maithali (n=38)	SeTaMaGuRa Li (n=75)	
Gastric ulcer	28.1	33.5	31.5	15.5	0.29
Duodenal ulcer	16.8	25.3	16.0	7.9	0.31
Esophageal varices	20.3	8.2	5.1	33.3	0.02
Fundal varices	3.1	0	0	1.3	0.62
Gastritis	19.4	16.6	23.8	26.6	0.76
Duodenitis	4.7	8.2	5.3	3.9	0.93
Esophageal erosions/ulcers	4.7	0	7.9	3.6	0.69
Mallory-Weiss tear	3.1	8.2	7.9	5.3	0.74
Growth	0	0	2.6	2.6	0.57

¹ χ^2 test