

Clinical and Endoscopic Features of Peptic Ulcer Bleeding in Malaysia

* P Kandasami, FRCS, ** K Harjit, FRCS, *** H Hanafiah, FRCS

* Department of Surgery, International Medical University, ** Department of Surgery, Hospital Putrajaya, *** Department of Colorectal Surgery, Western General Hospital, Edinburgh, United Kingdom

Summary

The characteristics of patients and the endoscopic features of 196 patients with bleeding peptic ulcer in a multi-ethnic population were investigated. There was a male preponderance (M: F= 6.3: 1) and their mean age was 63.5 years. The prevalence of peptic ulcer bleeding in the Malays and Indians was similar to the ethnic distribution of population. However, the Chinese were over represented. Nearly 40% of patients studied had at least one co-existing medical illness. Hypertension and ischaemic heart disease were the most common diseases. History of non-steroidal anti-inflammatory drug usage was identified in 48% of the patients and it was the commonest risk factor associated with bleeding ulcers. More than 80% of bleeding ulcers were located in the duodenum and the pylorus. Endoscopic features of active bleeding or recent bleed were identified in more than 60% of the patients. The study notes that bleeding peptic ulcer is a serious and a potentially life threatening condition. It is a disease of the elderly and, with the steadily increasing elderly population in the country, the admissions rates of peptic ulcer bleeding is expected to rise. There is a need to plan for appropriate technical support, critical care facilities and expertise to avoid unacceptable outcomes.

Key Words: Epidemiology, Peptic ulcer bleeding, Risk-factors

Introduction

Peptic ulcer remains the commonest and most significant cause of non-variceal upper gastrointestinal bleeding^{1,2}. Despite the availability of effective peptic ulcer treatment, hospital admissions for ulcer bleeding have not decreased during the last three decades, and the mortality rate has remained at approximately 10% or more in most published series^{3,4}. The reason for the increase in complication and mortality rates is because bleeding peptic ulcer is principally a disease of the elderly^{1,2}. The frequent presence of co-morbidities in this group of patients is a major factor contributing to the increased mortality rates. Whilst preexisting *Helicobacter pylori* (*H. pylori*) infection and the regular

intake of non-steroidal anti-inflammatory drugs (NSAIDs) have been identified as major risk factors of gastric and duodenal ulcer disease, NSAIDs is drawing increasing attention as the principal risk factors of bleeding peptic ulcers^{5,6,7}. Patient characteristics and endoscopic features are determinants of rebleeding and mortality in bleeding peptic ulcers^{1,4}. This information is very vital for the management of peptic ulcer bleeding. Unfortunately most reports on peptic ulcer disease from Malaysia and Singapore mainly describe the characteristics of uncomplicated disease^{8,9}. The objective of this study was to obtain information on clinical features and endoscopic findings of bleeding peptic ulcer in Malaysia.

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Corresponding Author: P Kandasami, Department of Surgery, Clinical School, International Medical University, Jalan Rasah, 70300 Seremban Negeri Sembilan

Materials and Methods

Data for this study was taken from an ongoing audit on the management of bleeding peptic ulcer at Hospital Ipoh for the period January 1999 to December 1999. Consecutive patients admitted with haematemesis or melaena to the surgical unit were subjected to endoscopy examination. Patients with endoscopic evidence of peptic ulcer were included in the study. Patients with more than one source of bleeding or suspicion of malignancy were excluded. Patient biodata, as well as history of use of NSAIDs within two weeks prior to admission, smoking, consumption of alcohol and the use of steroids were obtained. The presence of *H. pylori* was not studied. Specialists trained in endoscopy performed the procedures and the characteristics of the ulcer were noted. Forrest classification¹⁰ was used to stratify the risk of bleeding in the ulcers (Table I). Categorical data were compared using χ^2 for goodness of fit test or Pearson's χ^2 as appropriate. Significance level was set at $p < 0.05$.

Results

A total of 385 patients were admitted for upper gastrointestinal bleeding during the study. One hundred and ninety six patients (66 Malays, 116 Chinese and 14 Indians) were confirmed to have bleeding from peptic ulcers after endoscopy.

Sex and Age Distribution

There was a preponderance of male patients, 169 male and 27 female patients. (M: F= 6.3:1). The age of the patients ranged from 28 to 93 years. Most of the patients were at the 6th and 7th decades of life and their mean age was 63.5 years. (Fig 1)

Ethnic Distribution

Table II shows the distribution of patients according to ethnicity. The ethnic distribution of the population in the State of Perak is as follows; Malays 46.7%, Chinese 33.0%, Indians 13.2% and others 7.1%¹¹. The ethnic distribution of adult admissions to Hospital Ipoh was approximately similar to this. However, the ethnic distribution of patients with bleeding peptic ulcer was statistically different from that of the general population (χ^2 for goodness of fit test, $\chi^2 = 67.1$, $p < 0.01$), showing a preponderance of Chinese, and lower proportion of Malays and Indians.

History of Co-morbidities

Many of the patients suffered from co-morbidities in the form of hypertension, diabetes mellitus, ischaemic heart disease, chronic obstructive airway disease or renal impairment. Seventy-seven patients (39.3%) had at least one co-existing medical illness, hypertension and ischaemic heart disease being the commoner disorders.

Risk Factors Associated With Bleeding Ulcers

At least one risk factor was elicited in 120 (61%) patients. History of non-steroidal anti-inflammatory drug (NSAID) use was noted in 94 (48.0%) patients, smoking in 73 (37.2%), alcohol in 15 (7.6%) and use of steroids in 13 (6.6%) patients. Interestingly it was noted that Malay patients with bleeding peptic ulcer are more likely to have reported usage of NSAIDs than Chinese or Indian patients ($\chi^2 = 7.43$, $p < 0.05$) (Table III).

Site, Size and Endoscopic stigmata of Ulcers

More than 80% of the bleeding ulcers were located in the duodenum and the pylorus. There were 85 (43.4%) ulcers in the duodenum, 75 (38.2%) in the pylorus and 36 (18.4%) gastric ulcers. Many of the bleeding ulcers in this study were large and nearly 60% of were greater than 1cm (Table IV).

More than 60% of the patients presented with endoscopic evidence of active bleeding or recent bleed. Fifty-three patients (27.0%) had active bleeding ulcers and in another seventy-seven patients (39.3%) the ulcers showed evidence of recent bleed at endoscopy. The ulcer was clean based in 66 (33.7%) of the cases (Table V).

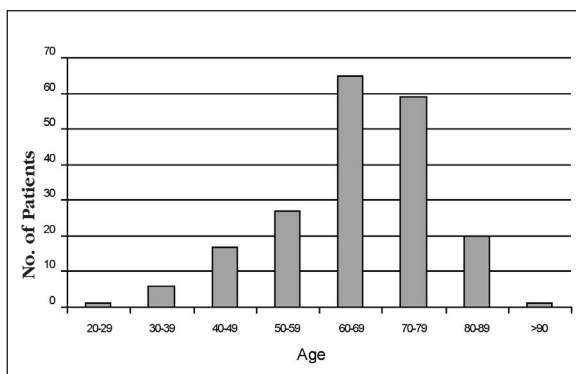


Fig 1: Age Distribution of Bleeding Peptic Ulcers

Table II: Distribution of Patients According to Ethnicity

Ethnicity	Male	Female	Total	Population*
Malay	55	11	66 (33.7%)	46.7%
Chinese	101	15	116 (59.2%)	33.0%
Indian	13	1	14 (7.1%)	13.2%
Others	0	0	0	7.1%
Total	169	27	196 (100%)	100%

*Ethnic distribution in the state of Perak

Table III: Risk Factors According to Ethnicity*

Ethnicity	Patients	Alcohol	NSAIDS	Smoking	Steroids
Malay	66	0 (0%)	40(60.6%)	23(34.8%)	2 (3.0%)
Chinese	116	12(10.3%)	50(43.1%)	39(33.6%)	12(10.3%)
Indians	14	4(28.6%)	4(28.6%)	11(78.6%)	0 (0%)
Total	196	16 (8.2%)	94(48.0%)	73(37.2%)	14 (7.1%)

*Percentages are proportion occurring in each ethnic group

Table IV: Size of the Peptic ulcers

Ulcer size	Number (%)
<1 cm	83 (42.3%)
1-2 cm	85 (43.4%)
>2cm	28 (14.3%)

Table V: Endoscopic stigmata of bleeding ulcers

Characteristics	Number (%)
Spurting arterial bleeding	18 (9.2%)
Oozing bleed	35 (17.8%)
Non-bleeding visible Vessel	28 (14.3%)
Adherent blood clot	49 (25.0%)
No signs of recent hemorrhage	66 (36.7%)
Total	196 (100%)

Discussion

Despite the introduction of H₂-receptor antagonists and proton pump inhibitors the admission rates for peptic ulcer bleeding continues to be on the rise^{12,13}. It is a major clinical problem as the disease increases appreciably with age¹². In our study, 74% were of advanced age group (over 60 years old). This is a major concern because the proportion of elderly patients in Malaysia is growing faster than the general population. It was estimated that there were 6.6% or 1.5 million

older persons (60 years and over) in the year 2000 and it is projected to increase to about 4 million (11.3%) by the year 2020¹⁴. Patients older than 60 years have been shown to have a significantly higher mortality rate than have those patients who are less than 60 years¹⁵. The presence and the number of co-existing medical illness have been closely related to mortality. We observed that nearly 40% of the patients in our study had at least one co-existing medical illness. There are no estimates on the incidence of peptic ulcer bleeding in the

country. However, it can be expected to steadily increase with the increasing population of the elderly. The projected increase in admissions for bleeding peptic ulcer in patients with advanced age and comorbidities signifies rising health care cost. It is prudent for us to develop technical support, critical care wards and appropriately trained medical and surgical personnel to avoid unacceptable outcomes

At all ages, peptic ulcer bleeding has a male preponderance and in the United Kingdom the incidence males are reported to be more than double that in females². However, in the elderly, females outnumber male patients. In fact, women account for 60% of patients older than age 60 presenting with upper gastrointestinal bleeding¹⁶. In our study, men outnumbered women by more than six fold for all ages. We were not able to explain the reason for the wide disparity in the prevalence of peptic ulcer bleeding between male and female patients.

Whilst, infection with *H. pylori* is prevalent in uncomplicated peptic ulcer disease, the use of NSAIDs and aspirin are frequent in patients with bleeding peptic ulcer^{17,18}. Wilcox et al noted that 65% of patients with gastrointestinal bleeding were using aspirin or other NSAIDs, including prescription and nonprescription medications¹⁹. In another study, it was noted that 76% of elderly patients bleeding from peptic ulcers were taking NSAIDs²⁰. The occurrence of NSAIDs related complication of peptic ulcer parallels the increased rate of its use. This study did not estimate the prevalence of *H. pylori* infection among the patients but NSAIDs usage was identified, as the most common factor associated with peptic ulcer bleeding. Nearly 48% of the patients admitted to the usage of NSAIDs. This is not surprising because in this study the majority of patients (74%) were aged 60 years and above. Older patients are more likely to use NSAIDs, which consequently increases their risk of ulcer bleeding. In our study we noted that the Malays patients with bleeding peptic ulcer are more likely to have reported usage of NSAIDs than Chinese or Indians. This is an interesting observation and further studies are required to confirm this findings. In Malaysia there is a tendency among the general population to treat minor ailments by self-medication with over-the-counter drugs and/or traditional medicines²¹. NSAIDs are among some of the most widely consumed medications and they are available by prescription and 'over the counter'. Appropriate clinical strategies should be developed to reduce peptic

ulcer and its complications. NSAIDs should be used cautiously in patients who are at risk of peptic ulcer bleeding; these include advanced age, smoking, history of peptic ulcer, and use of oral corticosteroids or anticoagulants. NSAIDs should be used only in patients who do not respond to other analgesics and the least toxic NSAIDs should be the used.

In Malaysia, uncomplicated peptic ulcer is reported to be disproportionately high in the Chinese and Indians and low in Malays. The ethnic differences in the prevalence rate have been explained by the differences in the prevalence of *H. pylori* infection rate. In a large cross-sectional survey in patients with dyspepsia, Goh KL recorded high prevalence rates of *H. pylori* infection in the Chinese and Indians when compared to Malays²². In our study the Chinese had a significantly higher than expected prevalence of peptic ulcer bleeding. However, unlike uncomplicated peptic ulcer disease, the prevalence of bleeding peptic ulcer in Malays was similar to the ethnic distribution of population. The study has demonstrated that bleeding peptic ulcer is a disease of advanced age (over 60 years). In the elderly, the causes of bleeding include those that are unique to old age as well as that seen in the younger patients. Therefore the factors associated with peptic ulcer bleeding differ from that of uncomplicated peptic ulcer disease. This may have contributed to the disparity in the prevalence of peptic ulcer bleeding and peptic ulcer disease in the Malays.

Besides age and co-existing medical illness, ulcer size and stigmata of recent hemorrhage have all been described as significant risk factors for further hemorrhage and death²³. It is therefore relevant to accurately define the characteristics of the bleeding ulcer. In recent years endoscopy has become the cornerstone of diagnosis and risk stratification has become a critical factor in the treatment strategy^{24,25}. Ulcers located high on the lesser curve of the stomach or on the posterior wall of the duodenal bulb are most likely to bleed. Presumably, the greater the ulcer size, the greater the risk of eroding through an artery. In this study duodenal ulcers were more common than gastric ulcers and the majority of ulcers were larger than 1cm in size. There was evidence of endoscopic stigmata of active bleeding or recent bleed in 60% of the patients. These patients with actively bleeding ulcers or ulcers with non-bleeding visible vessels are at risk of continuing bleed or death and they need to be treated actively. It can be envisaged that managing patients with bleeding peptic ulcers in the country can be

challenging. To improve outcomes, hospitals managing this problem must have proper guidelines and there must be close cooperation between medical and surgical gastroenterologists.

Conclusion

Peptic ulcer bleeding is a serious clinical problem with considerable threat to life. In the Malaysian perspective, more than half the patients have endoscopic stigmata that suggest active bleeding or recent bleed. It affects elderly patients who have concurrent medical illness and NSAIDs usage is the principal risk factor. The aging population of the country together with increasing use of NSAIDs is

expected to steadily increase the number of hospitalized patients for bleeding peptic ulcers. It is hoped that better understanding of the disease would influence the outcome of the management of the clinical problem.

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