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Prevalence and outcome of peptic ulcer bleeding in patients with liver cirrhosis

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KEYWORDS

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Abstract *Background:* Upper gastrointestinal bleeding is usually classified as either variceal or non-variceal. In cirrhotic patients, variceal bleeding has been extensively studied but, 30–40% of cirrhotic patients who bleed have non-variceal upper gastrointestinal bleeding (NVUGIB) that is frequently caused by gastro duodenal ulcers. Peptic ulcer bleeding (PUB) leads to substantial morbidity and mortality in patients with liver cirrhosis.

Aim: The aim of this study was to assess the prevalence and outcome of PUB in patients with liver cirrhosis.

Materials and methods: This was a cross-sectional study. Data on cirrhotic patients with PUB over a seven-year period between January 2006 and January 2013 were collected.

Results: Among 103 patients with NVUGIB, 62 patients (60%) having PUB were assessed. Fifty percent were male. Ages ranged from 37 to 72 years, mean 59 ± 7 years. The most common symptom on presentation was hematemesis (53%). Hemodynamic instability on admission was found in 30 patients (48%). Eighteen patients (29%) had initial hemoglobin less than 7 g/dl. Twenty-seven patients (44%) required blood transfusion and the average number of transfused blood units was two. Forty patients (65%) bled from gastric ulcers. Eleven patients (18%) had ulcers with adherent

Abbreviations: UGI, upper gastrointestinal; NVUGIB, non-variceal upper gastrointestinal bleeding; PUB, peptic ulcer bleeding.

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clot. Twenty-four percent of patients had a Rockall score more than five. Five patients (8%) rebled. Complications were reported in seven patients (11%), mainly liver failure. Overall mortality was 8%. Male gender, adherent clot, bleeding recurrence, development of complications during admission and a Rockall score >5 were significant factors for increasing mortality ($P = 0.02$, 0.016, 0.00001, 0.034 and 0.00003 respectively).

Conclusion: The commonest cause of NVUGIB in patients with liver cirrhosis was PUB. Mortality in patients with PUB was particularly high among males, patients who had adherent clot, bleeding recurrence, development of complications and a high Rockall score.

1. Introduction

Upper gastrointestinal (UGI) bleeding is a common life threatening condition in which mortality rates range from 4% to 15%.[1] UGI bleeding is classified according to whether the source of bleeding is variceal or non-variceal. In cirrhotic patients, variceal bleeding has been extensively studied. Nonetheless, 30–40% of cirrhotic patients who bleed have non-variceal upper gastrointestinal bleeding (NVUGIB), and it is frequently caused by gastro duodenal ulcers.[1]

The association of peptic ulcer and liver cirrhosis has been extensively reported in the literature with an incidence varying between 2% and 42%.[2] The association of the two diseases is recognized to be a serious problem. Cirrhotic patients with peptic ulcer may be at an increased risk of bleeding due to coagulation dysfunction and thrombocytopenia, conditions that are frequently observed in these patients.[3]

Schistosomiasis and hepatitis C virus are common diseases in Egypt with hepatitis C virus currently infecting 20.7% of the Egyptian population.[4] Bolak Eldakror Hospital is a secondary-care governmental hospital in Giza, Egypt. The gastrointestinal endoscopy unit was set up in 1999. All patients presenting with acute UGI bleeding have been assessed and managed in house since 2004.[5,6] A quality controlled disease management protocol for acute bleeding was established with the intention of improving the quality and efficiency of our health care delivery. Clinical guidelines and a clinical care pathway were developed within the availability of local therapeutic options in order to provide a stand-alone practical guide for the team. Patients are classified as being at low or high risk of rebleeding and mortality based on the Rockall risk score (Table 1). Patients with a low risk of rebleeding and mortality are discharged home and subsequently undergo diagnostic endoscopy on the next available list. Those at high risk are admitted to the hospital for intensive monitoring and early, energetic resuscitation. Endoscopy is performed on the morning of the second day to establish the diagnosis, to control bleeding and to prevent rebleeding if considered appropriate. As with most government hospitals in Egypt balloon tamponade, vasoactive drugs, IV proton pump inhibitor drugs, surgical shunts, trans-jugular intrahepatic porto-systemic shunts and arterial embolization are not locally available.

The aim of this study was to assess the prevalence and outcome of peptic ulcer bleeding (PUB) in patients with liver cirrhosis.

Table 1 Rockall numerical scoring system.

Initial score criteria	
Age (years)	
0	<60 years
1	60–79 years
2	>80 years
Shock	
0	SBP* ⩾100 mmHg & pulse <100 beats per min. (no shock)
1	SBP ⩾100 mmHg & pulse ⩾100 beats per min. (tachycardia)
2	SBP <100 mmHg (hypotension)
Comorbidity	
0	Nil major
2	Cardiac failure, IHD** other major comorbidity
3	Renal failure, liver failure, disseminated malignancy
Additional criteria for full score	
Diagnosis	
0	Mallory–Weiss tear, no lesion identified and no SRB[a]
1	All other diagnoses
2	Malignancy of UGI[b] tract
Major stigmata of recent hemorrhage	
0	None or dark spot only
2	Blood in UGI tract, adherent clot, visible or spurting vessel

* Systolic blood pressure.
** Ischemic heart disease.
[a] Stigmata of recent bleeding.
[b] Upper gastrointestinal.

2. Materials and methods

This was a cross-sectional, hospital based study performed in cirrhotic patients with PUB over a 7-year period between January 2006 and January 2013.

All patients presenting with acute UGI bleeding and a confirmed diagnosis of liver cirrhosis were admitted, assessed and resuscitated in a three-bed intensive-care unit. Liver cirrhosis was diagnosed on the basis of clinical and laboratory data and ultrasonography. Histological examination of the liver was not performed. The etiology of the liver disease was not determined in all patients.

Those who were hemodynamically instable (heart rate >100 beats/min, hypotension with a systolic pressure <90 mmHg and/or diastolic value <60 mmHg) were managed with crystalloid solutions with or without blood transfusion. Patients with hemoglobin less than 7 g/dl were transfused according to individual requirements. All patients received prophylactic antibiotic therapy (IV third generation cephalosporin) for suspected variceal bleeding. Endoscopy was performed on the morning of the second day to establish the diagnosis, to control bleeding and prevent rebleeding. All