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ORIGINAL ARTICLE

The management of low-risk acute upper gastrointestinal haemorrhage in the community in Egypt

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KEYWORDS

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Abstract *Background:* Acute upper gastrointestinal haemorrhage (AUGIH) is a common emergency, initially managed with in-patient care. Bleeding stops spontaneously in over 80% of cases indicating patients with low-risk AUGIH might be better managed in the community.
Aim: The aim of the study was to assess the safety of managing patients with low risk AUGIH without admission to hospital.
Material and methods: This was a cross sectional hospital based study performed in patients presenting with low risk AUGIH over an eight-year period between January 2004 and 2012. Patients in this category were discharged home and underwent endoscopy on the next available list.
Results: Two hundred and twenty-three patients were analysed. 34% were male. Mean age 32 ± 11 years. The main presentation was haematemesis in 209 patients (94%). The mean time from the index attack of bleeding to presentation was 38 ± 11 h. Endoscopy was performed at a median of two days. One hundred and nine patients (49%) had a normal endoscopy. Ninety eight patients

Abbreviations: AUGIH, Acute upper gastrointestinal haemorrhage; SEF, significant endoscopic findings; SBP, systolic blood pressure; IHD, ischaemic heart disease; SRH, stigmata of recent haemorrhage; UGI, upper gastrointestinal.

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(44%) had significant endoscopic findings (SEF) (peptic ulcer, mucosal erosions, oesophagitis, ectasias, Mallory-Weiss tear and mass). SEF were related to age ($P = 0.01$). SEF were reported in 61 patients (62%) $\geqslant$30 years and 37 patients (38%) $<$30 years. One patient (0.5%) rebled. No patient required endoscopic intervention or emergency surgery. The 15-day mortality was nil. *Conclusion:* Patients with low risk AUGIH can be safely managed in the community. Reduction of admissions for such patients allows more appropriate use of in-patient resources with consequent financial savings. Patients with low risk AUGIH should however undergo endoscopy because it often reveals SEF.

1. Introduction

Acute upper gastrointestinal haemorrhage (AUGIH) is a common emergency, initially managed with in-patient care. Bleeding stops spontaneously in over 80% of cases indicating that patients with low-risk upper gastrointestinal haemorrhage might be better managed in the community, without admission to hospital.[1] Many risk factors influence the outcome of AUGIH. Age, comorbidity, shock, diagnosis, admission haemoglobin values, presentation, ulcer size, stigmata of recent haemorrhage, and blood transfusion requirements have all been described as significant risk factors for further haemorrhage and death.[2] The assessment of AUGIH involves the identification of patients who require urgent admission and patients who can be managed at home without involvement of hospital services.[3] Patients with low-risk AUGIH may be better managed in the community, without admission to hospital.[3]

Stratification of patients in low and high-risk categories for rebleeding and mortality can be achieved using the Blatchford and initial Rockall score (before endoscopy), or full Rockall score (after endoscopy).[4] The Rockall scoring system was principally designed to predict death based on a combination of clinical and endoscopic findings.[3] The initial (pre-endoscopic) Rockall score is derived from age (0 to 2 points), shock (0 to 2 points) and comorbidity (0 to 3 points). The minimum score of 0 is assigned to patients with age $<$60 years who have no evidence of shock and or comorbidity. A score of 0 identifies 15% of patients with AUGIH at presentation who have an extremely low risk of rebleeding (0.2%) and mortality (0.2%), and who may be suitable for an early discharge or non-admission. The full Rockall score comprises the initial score plus additional points for endoscopic diagnosis (0 to 2 points), and endoscopic stigmata of recent haemorrhage (0 to 2 points) giving a maximum score of 11 points. Patients with AUGIH and Rockall score $\leqslant$2 on the full Rockall score have a low risk of rebleeding (4%) and mortality (0.1%). Early endoscopy identifies a substantial number of patients at low risk of rebleeding or death who should be considered for early discharge and appropriate outpatient follow up.

Bolak Eldakror Hospital is a secondary-care governmental hospital in Giza, Egypt. The gastrointestinal endoscopy unit was founded in 1999. A plan for the management of AUGIH was formulated in two stages. Stage one, 2000–2004, was the training of staff and preparation. Stage two began in January 2004 when guidelines and management protocol were developed and all patients presenting with AUGIH were assessed and managed in house. Patients were classified as being at low or high risk of rebleeding and mortality. Patients with a low risk of rebleeding and mortality were discharged home and underwent endoscopy on the next available list. The aim of this study was to assess the safety of managing patients with low risk AUGIH without admission to hospital in Egypt.

2. Material and methods

This was a cross sectional hospital based study performed in patients presenting with low risk AUGIH over an eight-year period between January 2004 and January 2012. All patients were emergency admissions, assessed by the medical residents who were in direct contact with the consultant gastroenterologists. Bleeding stopped spontaneously in all patients. Acute bleeding was defined as bleeding within three to seven days from presentation. Low risk AUGIH was defined based on initial Rockall score (Table 1). Patients with score zero (age

Table 1 Rockall numerical scoring system.

Initial score criteria	
Age (years)	
0	$<$60
1	60–79
2	$>$80
Shock	
0	SBP[a] $\geqslant$100 mm Hg and pulse $<$100 beats per min. (no shock)
1	SBP $\geqslant$100 mm Hg and pulse $\geqslant$100 beats per min. (tachycardia)
2	SBP $<$100 mm Hg (hypotension)
Comorbidity	
0	Nil major
2	Cardiac failure, IHD[b] 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 SRH[c]
1	All other diagnoses
2	Malignancy of UGI[d] tract
Major stigmata of recent haemorrhage	
0	None or dark spot only
2	Blood in UGI tract, adherent clot, visible or spurting vessel

[a] Systolic blood pressure.
[b] Ischaemic heart disease.
[c] Stigmata of recent haemorrhage.
[d] Upper gastrointestinal.

less than 60 years, haemodynamically stable and no significant comorbidities) were discharged home, underwent endoscopy on the next available list and were followed in the outpatient clinic. The end points were two weeks of follow up or the death of the patient. Outcomes were analysed annually. The reports were transmitted to an independent experienced gastroenterologist with a particular interest in gastrointestinal haemorrhage for comment and advice.

Of 1165 patients presenting with AUGIH 223 patients (19%) were at low risk. A standardized data collection form (sheet) was completed for each patient. Recorded information included demographic information, historical data (presenting symptoms and co-morbid illnesses), physical examination findings (haemodynamic data) and initial haemoglobin level. The endoscopic components of the database included identification of the bleeding lesion and endoscopic therapy if any. Outcome measures were complications (further bleeding), the need for intervention (admission to hospital, blood transfusion, re-endoscopy, endoscopic therapy, surgery to control the bleeding) and death.

The data from the patients were registered, tabulated and analysed statistically using a programme of SPSS version 15.

3. Results

Two hundred and twenty-three patients fulfilled the inclusion criteria and were analysed. Thirty-four percent were male and 66% female. Ages ranged from 16 to 58 years, mean 32 ± 11 years. The main presenting symptom was haematemesis in 209 patients (94%), melaena in seven (3%) and both in seven (3%). The mean time from the index attack of bleeding to presentation was 38 ± 11 h (range 2–140 h). One hundred and eighty-eight patients (84%) had no comorbidity and thirty-five patients (16%) had minor co-morbidity (hypertension or diabetes mellitus). The mean systolic blood pressure was 120 ± 12 mm Hg (range 100–170 mm Hg) and the mean pulse rate was 83 ± 6 beats per minute (range: 60–96 beats per minute). The mean haemoglobin concentration was 12 ± 1 g/dl (range: 10–14 g/dl).

Endoscopy was performed at a median of 2 days (range 1–5 days). One hundred and nine patients (49%) had a normal endoscopy and 114 patients (51%) had endoscopic findings (Table 2). Ninety-eight patients (44%) had significant endoscopic findings (SEF) (peptic ulcer, mucosal erosions, oesophagitis, vascular ectasias, Mallory-Weiss tear and mass). SEF were related to age ($P = 0.01$). SEF were reported in 61 patients (62%) $\geqslant$30 years and 37 patients (38%) $<$30 years (Table 3).

Table 2 Endoscopic findings for patients with low risk AUGIH.

Endoscopic finding	Incidence (%)
No lesion found	109 (49%)
Peptic ulcer	40 (18%)
Oesophagitis	27 (12%)
Gastritis and duodenitis	16 (7%)
Vascular ectasias	16 (7%)
Mucosal erosions	9 (4%)
Mallory-Weiss tear	4 (2%)
Submucosal mass (leiomyoma)	1 (0.5%)
Duodenal mass (carcinoid)	1 (0.5%)

Table 3 Significant endoscopic findings versus age among patients with low risk AUGIH.

	$\geqslant$30 years	$<$30 years	Total
Significant endoscopic findings	61 (62.2%)	37 (37.8%)	98 (100.0%)
No significant endoscopic findings	56 (44.8%)	69 (55.2%)	125 (100.0%)

$\chi 2 = 6.7$, $P = 0.01$, Significant.

Forty patients (18%) had peptic ulcers of whom 34 (15%) had ulcers with clean base, four (2%) flat pigmented spots and two (1%) clot. Two patients (1%) had ulcers with clot (full Rockall score three). Water irrigation to dislodge the clot was unsuccessful. Both patients were discharged home (patients' request) and had no complications. One patient (0.5%) with a mass (leiomyoma) was referred to surgery. Another patient (0.5%) with a mass (carcinoid) was referred to the National Cancer Institute for further management. One hundred and thirteen patients (51%) had a full Rockall score of Zero, 107 patients (48%) scored one, one patient (0.5%) scored two and two patients (1%) scored three.

One patient (0.5%) with peptic ulcer and a flat pigmented spot rebled. The patient was readmitted to hospital, received blood transfusion and a second endoscopy that showed the same findings. The patient received conservative management and was discharged home few days later. No patient required endoscopic intervention or emergency surgery. The 15-day mortality was nil.

4. Discussion

AUGIH is the most common gastroenterological emergency. There is a large range of clinical presentations, from minor AUGIH that can be managed safely in the community to catastrophic exsanguination. [5] Patients with AUGIH are routinely hospitalized, regardless of clinical status or endoscopic findings. Evidence suggests that patients admitted with AUGIH can be accurately stratified according to their risk of subsequent adverse outcome (rebleeding or death) using clinical and endoscopic criteria.[6]

Published reports indicate that the proportion of all patients presenting to hospital with acute, nonvariceal AUGIH who are considered to be at low risk for adverse outcomes (i.e., less than 5% rebleeding and less than 1% mortality) ranges from 20% to 70%. These low risk patients are usually admitted to hospital for inpatient care, often to an ICU or a monitored care setting. They may have prolonged hospital stays at high cost without documented benefit in outcomes.[6]

One study assessed the management of patients at low risk of recurrent bleeding comparing the outcome of those who received outpatient versus hospital care.[7] Ninety-five consecutive patients were randomized to either early discharge with outpatient care (48) or hospital care (47). No patient underwent surgery or died. Rates of recurrent bleeding were 2.1% in the early discharge group and 2.2% in the hospital-treated group. Median costs were $340 for the outpatient group and $3940 for

the hospital group ($P = 0.001$). The authors concluded that outpatient care of patients at low risk for recurrent upper gastrointestinal haemorrhage is safe and can lead to significant savings in hospital costs.

Many studies have shown that managing patients with low risk AUGIH in the community is safe. In a UK study 142 patients with low risk AUGIH were managed without admission, none of them required endoscopic intervention, blood transfusion or surgery and the 28-day mortality was nil.[1] In another study from the UK, 84 patients with low risk AUGIH were managed as outpatients without adverse events.[8] In a third study from the UK, 156 patients with low risk AUGIH were managed in the community.[9] None of them required endoscopic therapy, blood transfusion or surgery and none of them died.

Bolak Eldakror Hospital is a secondary-care governmental hospital in Giza, Egypt. A plan for the management of AUGIH together with a management protocol was developed. All patients presenting with AUGIH have been managed in house since 2004. Patients were classified as being at low or high risk of rebleeding and mortality. Patients with a low risk of rebleeding and mortality were discharged home and underwent endoscopy on the next available list. Patients at high risk were admitted and underwent intense monitoring with adequate resuscitation and urgent endoscopy. We previously reported the outcome of 1000 patients presenting with AUGIH to our hospital.[10] The overall mortality was 15%. In this study we report the outcome of managing patients with low risk AUGIH without admission to hospital. We used the initial Rockall score to assess low risk AUGIH. The initial Rockall score, which is based on simple clinical parameters, is the only pre-endoscopic formal scoring system with any external validation.[3] Two hundred and twenty-three patients were analysed. Patients aged less than 60 years, were haemodynamically stable and had no significant comorbidities. All patients were emergency admissions (not current inpatients or transfers) and bleeding had stopped spontaneously (no witnessed haematemesis, melaena or haematochezia). All of these patients were discharged home underwent endoscopy on the next available list and were followed in the outpatient clinic.

Ninety-eight patients (44%) had SEF. SEF were more common in patients aged $\geqslant$ 30 years. One patient (0.5%), with initial Rockall score zero and full Rockall score one, rebled. The patient was readmitted to hospital, received blood transfusion and a second endoscopy was performed. No patient required endoscopic intervention or emergency surgery. The 15-day mortality was nil.

In conclusion, 223/1165 patients (19%) presented with AUGIH with an initial Rockall score zero and were at low risk. They were safely managed without admission to hospital and 44% had SEF. Reduction of admissions for such patients allows more appropriate use of in-patient resources with consequent financial savings.

Patients with low risk AUGIH can be safely managed in the community. All such patients however should have an upper gastrointestinal endoscopy because it often identifies significant findings.

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