

# Acute upper gastrointestinal haemorrhage in a district general hospital: audit of an agreed management policy

**ABSTRACT**—All patients from an unselected population admitted with acute upper gastrointestinal (GI) haemorrhage to a District General Hospital (DGH) were studied prospectively over one year. Before the study period a management policy was agreed between physicians and surgeons. One-hundred-and-nine patients were admitted. Sixty-eight per cent were over 60 and 17% over 80 years of age. Sixty patients bled from peptic ulcers and seven patients rebled. Endoscopic stigmata (visible vessel, adherent clot, and oozing) were useful in identifying those at increased risk of rebleeding but not as an indication for surgery. Six patients underwent surgery for peptic ulceration with one postoperative death. There were four deaths among the other patient groups giving an overall mortality of 4.6%. This audit shows a low mortality after acute upper GI haemorrhage can be achieved even in an elderly population in a DGH without the establishment of a specialist unit but with an agreed policy of management.

Acute upper gastrointestinal (GI) haemorrhage remains a major clinical problem. Attempts to reduce mortality have included the establishment of specialised units and referral centres, and the use of interventional endoscopy with lasers, injection, or bipolar diathermy [1,2]. Previous reports from specialist centres may not reflect the natural history and risks of GI bleeding because of referral bias [1,3,4]. In a previous retrospective study from a DGH the mortality from bleeding peptic ulcers was 10% and the overall mortality 15% [5].

To define the aetiology and outcome of an unselected population with acute upper gastrointestinal haemorrhage all admissions to the Princess of Wales Hospital, Bridgend, were prospectively studied over one year. This District General Hospital serves a resident population of 136,000 and all emergency medical

admissions are admitted to a single site irrespective of age.

## Methods

Before the study all consultant surgeons and physicians agreed policy guidelines for the management of acute bleeding. This policy was based on the principle of early surgery for patients over 60 who rebled from peptic ulceration [3,6] and was as follows.

1. Patients were admitted to a medical ward under the care of the consultant physician on call, and the surgeons on call were promptly informed. The patient was reviewed by both the resident medical and surgical officers and there was close liaison between the same two teams throughout the admission.

2. Patients were resuscitated, given iv ranitidine (50 mg tds), and fasted until endoscopy. Central lines, central venous pressure monitoring and nasogastric aspiration were not used routinely.

3. Patients were given 'direct access' to the next routine endoscopy list. Emergency endoscopy was performed in theatre. The presence of the following endoscopic stigmata was recorded: oozing, visible vessel, and adherent blood clot. If the source of haemorrhage had not been accurately defined endoscopy was repeated.

4. Normal diet and oral H<sub>2</sub> antagonist were started after endoscopy. Rebleeding was defined in the protocol given to all those involved [4].

5. The criteria for considering surgery for bleeding peptic ulcers are shown in Table 1. Endoscopic stigmata were not used as an indication for surgery as a previous study had used them and had resulted in a high operative rate [3].

The details of all emergency admissions with acute upper GI bleeding were recorded prospectively over one year. Only those with a definite history of haematemesis or melaena were included. Patients who bled while already in hospital with another condition were excluded. It was considered impractical to establish a specialist unit or to admit all cases to a single ward.

## Results

One-hundred-and-nine patients were admitted during the 12-months study. Seventy-four were aged over 60 (68%) and 19 were over 80 years (17%).

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**Table 1.** Indications for considering surgical management in patients with bleeding peptic ulcers

In patients under 60 years:	
Spurting vessel at endoscopy	
Two rebleeds	
Transfusion requirement >8 units in 24 hours or >12 units in 48 hours for volume replacement	
In patients over 60 years:	
Spurting vessel at endoscopy	
One rebleed	
Transfusion requirement >4 units in 24 hours for volume replacement	

There were no deaths among the patients with oesophagitis (11), gastric erosions (9), Mallory-Weiss tears (8), duodenitis (4), or leiomyoma (1). One patient had a wedge excision for a Dieulafoy malformation and this case is described elsewhere [7]. Three patients had bleeding gastric cancers and none died during that admission. Three patients had normal endoscopies.

Six patients (aged 62–70) were admitted with bleeding oesophageal varices and injection sclerotherapy was the first-line treatment. Two patients died; one had severe haemorrhage before definitive treatment and the other had a hepatocellular carcinoma complicating alcoholic cirrhosis.

One patient was considered unfit for either investigation or surgery because of severe chronic obstructive airways disease and steroid therapy. She was treated with H<sub>2</sub> antagonists and blood transfusion; she did not rebleed and was discharged home.

Sixty patients (55%) bled from peptic ulceration, and details are given in Table 2. The ratio of duodenal to gastric ulcers was 1.07. Their age distribution is shown in Fig. 1; only one of these patients was taking corticosteroids.

Most patients were endoscoped within 24 hours of admission as they were given direct access to the next routine list (92/109, 84%). Details of the endoscopic stigmata and rebleeding are shown in Table 3. Two of the patients (both with duodenal ulcers) with stigmata were under 60 years of age. Rebleeding occurred in one of the 45 patients without stigmata and in six of the 15 patients with stigmata ( $p < 0.01$ , Fisher's exact test). One 24-year-old man with an oozing duodenal ulcer (DU) who rebled settled with conservative management, but the other six required surgery (4 GU, 2 DU). There was one postoperative death, in a 65-year-old woman with a gastric ulcer (GU) who had taken steroids and NSAIDs for rheumatoid arthritis. She was the only patient who rebled in the absence of endoscopic stigmata. There was one other major postoperative complication of myocardial infarction in a man whose angina worsened as a result of haemorrhage. He recovered uneventfully.

**Table 2.** Details of patients with peptic ulceration.

	GU	DU	DU and GU	Total
Number	28	30	2	60
Male	18	22	1	41 (68%)
Age over 60	22	22	2	46 (77%)
Age over 80	8	5	0	13 (22%)
NSAIDs	15	13	1	29 (28%)
Blood transfusion	22	21	1	44 (73%)
Smokers	4	14	0	18 (30%)

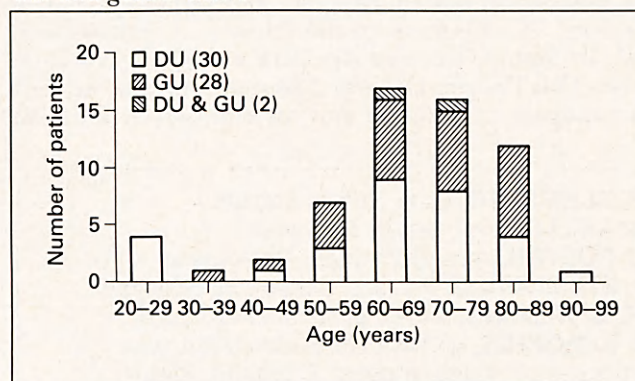
GU = gastric ulcer; DU = duodenal ulcer; NSAIDs = patients taking non-steroidal anti-inflammatory drugs (including aspirin)

Two further patients (aged 93 and 94) underwent endoscopy which showed a normal oesophagus but large quantities of blood and clots in the stomach. The precise source of bleeding could not be defined and both continued to bleed and subsequently died. Neither underwent surgery or autopsy.

A total of five deaths occurred in 109 admissions (4.6%). The mortality from bleeding peptic ulceration was 1/60 (1.7%), although the two patients described above who died may also have had a peptic ulcer (3/62, 4.8%).

## Discussion

Important points arise from this prospective audit of patients with GI bleeding admitted to a DGH. This series has one of the highest percentages of elderly patients and the previously observed upward trend continues [8]. Sixty-eight per cent of all admissions and 78% of those with peptic ulceration were over 60 years of age. Seventeen per cent of all admissions and 22% of those with peptic ulcers were aged over 80 years. This reflects the absence of an age-related referral pattern.

**Fig 1.** Age distribution of patients with bleeding duodenal and gastric ulcers

The cause of the bleeding was undiagnosed in only six patients [1]. This low failure rate in diagnosis reflects a policy of early endoscopy, mostly within 24 hours of admission. In practice the open access to routine lists worked smoothly and only a few emergency endoscopies were necessary. These patients with upper GI haemorrhage accounted for approximately 10% of the unit's gastroscopy workload. Early endoscopy is unlikely to influence mortality but is useful in permitting the prompt discharge of the patients with less serious lesions such as oesophagitis or Mallory-Weiss tears [9].

This series supports the estimated annual admission of between 50 and 100 per 100,000 population with upper GI bleeding [10]. It is unlikely that patients from the resident population were admitted to other hospitals with acute upper GI haemorrhage because of local geography. Five of the patients were visiting the area.

Peptic ulceration was the commonest cause of bleeding; management is usually uncomplicated but rebleeding can be life-threatening. In this series the risk of rebleeding was unusually low compared with other series [3-5]. Several factors may have contributed, including the policy of early feeding and routine use of H<sub>2</sub> antagonists. In addition the 'natural history' of peptic ulceration may be changing. Previous retrospective studies may have included all patients with severe or complicated haemorrhage while missing those with minor bleeding episodes and, consequently, overestimating both the risk of rebleeding and death [5].

Six (10%) of the seven patients who rebled from peptic ulcers underwent surgery. Our figures show that endoscopic stigmata are useful in identifying those at high risk of rebleeding but they should not be used as criteria for surgery [3,11-16]. Eight additional patients would have undergone 'unnecessary' surgery (Table 3) if endoscopic stigmata had been used as an indication for early surgery, increasing the operative rate from 10% to 23% (14/60). No deaths would have been prevented by this strategy. Indeed, a higher operative rate might have led to a higher mortality [3,17].

There were five patients who died and three of these were considered 'unavoidable'—two were very elderly with other medical conditions and one patient had a hepatoma and variceal haemorrhage. Potentially remediable factors were present in two deaths. One patient died from torrential variceal haemorrhage, while the other died postoperatively as a result of pre-existing cardiorespiratory disease.

To achieve satisfactory outcomes from gastrointestinal haemorrhage requires continuing enthusiasm, vigilance, close liaison, adequate staffing, and suitable resources. The precise details of any management policy are almost certainly less important to success than continuing clinical commitment, discussion, and good working relations [18].

In summary, this study shows that a low mortality can be achieved in a DGH, despite a high percentage

**Table 3.** Number of patients with endoscopic stigmata and (in brackets) the number who rebled

	GU (n = 28)	DU (n = 30)	DU and GU (n = 2)	Total (n = 60)
Endoscopic sign:				
Adherent clot	4 (1)	6 (1)	0	10 (2)
Oozing	1 (1)	2 (2)	0	3 (3)
Visible vessel	1 (1)	1 (0)	0	2 (1)
Total of those with endoscopic stigmata	6 (3)	9 (3)	0	15 (6)
No endoscopic stigmata	22 (1)	21 (0)	2 (0)	45 (1)

GU = gastric ulcer; DU = duodenal ulcer.

of elderly patients, without establishing a specialised unit. Endoscopic stigmata were not used as an indication for surgery and a low mortality and operative rate were achieved. A defined policy of management is essential as is active co-operation and close liaison between specialties.

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#### References

- Hunt PS, Francis JK, Hansky J, *et al.* Reduction in mortality from upper gastrointestinal haemorrhage. *Med J Aust* 1983;2:552-5.
- Rutgeerts P, Vantrappen G, Broeckaert L, *et al.* Comparison of endoscopic povidone iodine injection and YAG laser therapy for bleeding peptic ulcers. *Lancet* 1989;i:1164-6.
- Morris DL, Hawker PC, Brearley S, *et al.* Optimal timing of operation for bleeding peptic ulcer: prospective randomised trial. *Br Med J* 1984;288:1277-80.
- Macleod IA, Mills PR. Factors identifying the probability of further haemorrhage after acute upper gastrointestinal haemorrhage. *Br J Surg* 1982;69:256-8.
- Madden MV, Griffith GH. Management of upper gastro-intestinal bleeding in a District General Hospital. *J R Coll Physicians Lond* 1986;20:212-5.
- Darle N. Operative treatment of massive peptic ulcer bleeding. *Scand J Gastroenterol* 1985;20(suppl 110):109-11.
- Clements D, Nirula R, Rees A, Morris JS. Submucosal malformation (Dieulafoy erosion) causing gastric haemorrhage. *Hosp Update* 1989;15:786-8.
- Allan R, Dykes P. A study of the factors influencing mortality rates from gastrointestinal haemorrhage. *Q J Med* 1976;45:533-50.
- Editorial. Bleeding ulcers: scope for improvement? *Lancet* 1984;i:715-7.
- Dronfield MW. Upper gastrointestinal bleeding. In: *Diseases of the gut and pancreas*. Oxford and London: Blackwell Scientific Publications, 1987:421-38.
- Forrest JAH, Finlayson NDC, Shearman DJC. Endoscopy in gastrointestinal bleeding. *Lancet* 1974;ii:394-7.
- Foster DN, Miloszewski KJA, Losowsky MS. Stigmata of recent haemorrhage in diagnosis and prognosis of upper gastrointestinal bleeding. *Br Med J* 1978;1:1173-7.

- 13 Garrigues-Gil V, Clamp SE, Morgan AG, *et al.* Do the stigmata of recent haemorrhage have additional prognostic value in patients with bleeding duodenal ulcer? *Scand J Gastroenterol* 1988;**23**(suppl 144):59-62.
- 14 Griffiths WJ, Neumann DA, Welsh JD. The visible vessel as an indicator of uncontrolled or recurrent gastrointestinal hemorrhage. *N Engl J Med* 1979;**300**:1411-3.
- 15 Storey DW, Bown SG, Swain CP, *et al.* Endoscopic prediction of recurrent bleeding in peptic ulcers. *N Engl J Med* 1981; **305**:915-6.
- 16 Wara P. Endoscopic prediction of major rebleeding—a prospective study of stigmata of hemorrhage in bleeding ulcer. *Gastroenterology* 1985; **88**:1209-14.
- 17 Dronfield MW, Atkinson M, Langman MJS. Effect of different operation policies on mortality from bleeding peptic ulcer. *Lancet* 1979;i:1126-8.
- 18 Madden MV, Spence RAJ. Management of haematemesis in a district hospital—can we do better? *Postgrad Med J* 1986;**62**:907-8.

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