A bleeding ulcer: What can the GP do?

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In this article:

1. What is *UGI bleeding*?
2. When is emergency admission required?
3. What are some forms of office-based assessment?
4. What treatments are available?
5. When should the patient be referred to a specialist?

Gastrointestinal bleeding is a relatively common disorder affecting thousands of Canadians yearly. Upper gastrointestinal (UGI) bleeding accounts for the majority of significant bleeding episodes.[1,2] Patients with UGI bleeding that are hemodynamically unstable require emergency admission and intervention, whereas patients that are clinically stable will present to their primary-care provider with signs and symptoms of UGI bleeding. Assessment of the possible etiologies and risk stratification for further bleeding is critical in the second patient group in order to plan timely investigations.

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How is UGI bleeding manifested?

Most UGI bleeding patients (70%) present with black, tarry stools that have a characteristic odour. Patients, or their cohabitants, will note that the stool has a characteristic pungent odour. This, and the characteristic "sticky" or "tarry" consistency helps differentiate melena from ingested products, such as iron supplements and bismuth, that may change the stool colour.

Approximately 30% of patients present with either hematemesis or coffee-ground emesis. Although only 15% of patients with UGI bleeding present with hematochezia, patients with this condition require emergency assessment, since it typically indicates a large-volume hemorrhage of 500 cc to 1000 cc of blood loss. Patients with UGI bleeding may also have symptoms of hypovolemia, which include lightheadedness, syncope, palpitations, shortness of breath, and weakness that can vary depending on the quantity and rapidity of blood loss.

Who is at risk?

It is important to define patients at high risk for bleeding since preventive strategies may be available and recommended for these patients. Since the most common cause of UGI bleeding

Table 1
Rockall Score

	Score 0	Score 1	Score 2	Score 3
Age (years)	< 60	60 to 79	> 80	
Shock	Pulse: < 100 bpm SBP: > 100 mmHg	Pulse: > 100 bpm SBP: > 100 mmHg	Hypotension: < 100 mmHg	
Co-morbidity	No major co-morbidity		• Cardiac failure • Ischemic heart disease • Any other co-morbidity	• Renal failure • Liver failure • Disseminated malignancy
Endoscopic stigmata	None Dark spot		• Blood in upper GI tract • Adherent clot • Visible or spurting vessel	
Diagnosis	• Mallory-Weiss tear • No lesion seen and no stigmata of recent hemorrhage	All other diagnoses	Malignancy of upper GI tract	

Pre-endoscopy score	Risk of dying	Post-endoscopy score	Risk of dying	Risk of rebleeding
7	75%	> 8	40%	37%
6	62%	7	23%	37%
5	35%	6	12%	27%
4	21%	5	11%	25%
3	12%	4	8%	15%
2	6%	3	2%	12%
1	3%	0 to 2	0%	6%
0	0%			

SBP = Systolic blood pressure
GI = Gastrointestinal

Rockall TA, Logan RF, Devlin HB, et al: Risk assessment after acute upper gastrointestinal hemorrhage. Gut 1996; 38(3):316-21.

is peptic ulcer disease (PUD), patients at risk for bleeding tend to be those who are at high risk for ulcers. Risk factors for PUD include advanced age, use of nonsteroidal anti-inflammatory drugs, the presence of *Helicobacter pylori*, and a history of PUD. Other risk factors for UGI hemorrhage include those patients with a significant coagulopathy or a history of liver disease.

What causes UGI bleeding?

The most common cause of UGI bleeding is peptic ulcer disease (55%).

Recently, a registry was compiled in Canada, assessing 1,869 patients with acute UGI bleeding who were hospitalised. This in-depth evaluation of these patients demonstrated that the most common cause of UGI bleeding is PUD (55%) followed by esophagitis (8%), Mallory-Weiss tears (4%), and Dieulafoy lesions (2%). This database excluded patients with variceal bleeding, which has been demonstrated to encompass approximately 9% of all patients with UGI bleeding in other studies.[1] Mucosal erosive diseases (*i.e.,* erosions), in both the registry and other studies, were significant sources of UGI bleeding, accounting for between 15% and 20% of all episodes.

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Who requires emergency intervention?

There have been numerous studies to assess the risk of rebleeding, morbidity, and mortality in the setting of UGI bleeding. Rockall's score involves the assessment of five factors (age, comorbid disease, shock, endoscopic diagnosis, and endoscopic stigmata of a recent hemorrhage) and grades these factors on a scale of zero to three.[3-5] A maximun of 11 points are possible (Table 1). If the risk score is two or less, the risk of rebleed-

ing is less than 5% and the risk of death only 0.1%, therefore early discharge is recommended for patients with this score.

Unfortunately, Rockall's score relies on the endoscopic findings of patients with acute UGI bleeding, and therefore, has a limited role in the early assessment of patients in an office or emergency department setting.

About 15% to 20% of patients fall into a category that permits safe management as outpatients.

Blatchford recently developed and validated a scoring system that does not rely on endoscopy (Table 2).[6] This score uses the hemoglobin, urea, resting pulse rate, blood pressure, evidence of cardiac or hepatic disease, and presentation with syncope or melena, and attaches a score to each of these. A score of two or less signifies a very low-risk patient that can be investigated with endoscopic assessment as an outpatient.

Although scoring scales are difficult to adopt in primary care, their principles are critical to understand. For instance, a case that involves a young, healthy patient with no history of comorbid disease, who presents as hemodynamically stable with melena and normal hemoglobin and urea, can likely be investigated as an outpatient, without emergency hospital admission. On the other hand, an elderly patient with a history of liver disease who has melena presenting with syncope, would not be a good candidate for outpatient management and therefore, requires emergency admission and most likely, urgent endoscopic assessment. With the limited resources that are available in many sites throughout Canada, it is important that appropriate use of urgent endoscopy is implemented. Not all patients with UGI bleeding require urgent endoscopy, as approximately 15% to 20% fall

Table 2
Blatchford admission risk markers for GI hemorrhage and associated score component values

Risk marker component	Score value
Blood urea nitrogen µmol/L	
≥ 18.2 and < 22.4 (≥ 6.5 and < 8.0)	2
≥ 22.4 and < 28 (> 8 and < 10)	3
≥ 28 and < 70 (≥ 10 and < 25)	4
≥ 70 (≥ 25)	6
Hemoglobin in men g/L	
≥ 12 and < 13 (≥ 120 and < 130)	1
≥ 10 and < 12 (≥ 100 and < 120)	3
< 10 (< 100)	6
Hemoglobin in women g/L	
≥10 and <12 (≥100 and<120)	1
<10 (<100)	6
Systolic blood pressure	
100 to 109 mmHg	1
90 to 99 mmHg	2
< 90 mmHg	3
Other markers	
Pulse ≥ 100 beats per minute	1
Presentation with melena	1
Presentation with syncope	2
Hepatic disease	2
Cardiac failure	2

Blatchford O, Murray WR, Blatchford M: A risk score to predict need for treatment for upper gastrointestinal hemorrhage. Lancet 2000; 356: 1319.

into a category that permits safe management as outpatients.[4,7]

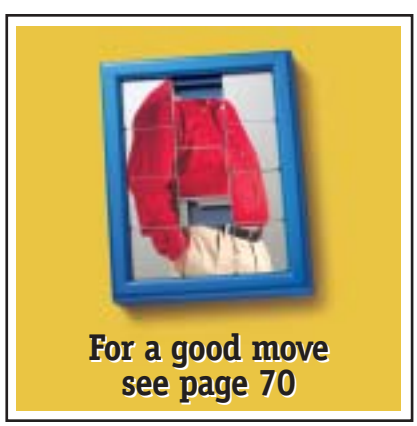
What treatments are available?

There is little argument that endoscopic diagnosis and intervention is critical in the management of UGI bleeding. Endoscopic therapy involves injection or cautery treatment of visible vessels or actively bleeding lesions. If varices (esophageal, gastric, or duodenal) are the sources of bleeding, these can also be treated endoscopically with various modalities. Endoscopic therapy has been definitively demonstrated to improve patient outcomes by decreasing rebleeding.[8]

Although endoscopic assessment and therapy are important for risk stratification, they are not immediately practical in an office setting, particularly if the patient has been assessed to be low risk and the strategy for management is elective endoscopy. So, for patients who will not have an immediate endoscopic assessment, is there therapy available that can improve their outcome?

Green et al. have demonstrated that acid suppression improves platelet aggregation.[9] Additionally, an acid milieu has been demonstrated to inhibit fibrin deposits which can lead to clot formation. Clinically, following endoscopic therapy, Lau et al. have shown that in patients with PUD, those who received intravenous acid suppression (IV proton pump inhibition) had better outcomes than the placebo group.[10] Additionally, oral proton pump inhibition has been used in studies of patients with PUD who underwent endoscopy but no endoscopic therapy.[11] Those patients receiving oral acid suppression had decreased bleeding rates compared to the placebo group.

For these reasons, those patients who present with UGI bleeding and are not going to have an immediate endoscopic assessment (either because it is not clinically required or not available), acid suppression (either orally if outpatient management is planned or intravenously if admitted to hospital) is recommended in a effort to improve patient outcomes.



When is a referral needed?

All patients with documented UGI bleeding require investigations. Barium studies are not useful (and potentially detrimental) in the setting of acute GI bleeding and are discouraged. Most bleeding (80%) will stop spontaneously and endoscopic assessment is usually performed for diagnostic or therapeutic purposes. Therefore, all patients where endoscopy is considered should be referred for an endoscopic assessment so that therapy may be accurately directed. Endoscopy is performed by many different specialists at various centres. Endoscopic expertise varies and endoscopy, particularly in the setting of severe acute UGI hemorrhage, may be challenging. Adequately trained personnel with a complete armamentarium of therapeutic devices is critical for appropriate management of severe UGI bleeds. CME

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Take-home message

- Most patients with significant UGI bleeding present with melena.
- Even with wide-spread therapy of *Helicobacter pylori*, peptic ulcer disease is still the most common cause of UGI bleeding, followed by mucosal erosive disease.
- Approximately 75% of bleeding may be responsive to acid suppressive therapy, as confirmed by clinical studies. This is recommended.
- From the office setting, appropriate risk stratification of patients is critical for assessing the urgency of the bleeding. The age of the patient, comorbid disease, hemodynamic status, and hemoglobin are all important factors to consider prior to determining if the patient requires emergency admission and endoscopy.