Improving the care of patients with gastrointestinal bleeding

All doctors take note – gastrointestinal bleeding presents on your wards and when it does patients have delayed treatment and poorer outcomes. 'Time to Get Control', a report from National Confidential Enquiry into Patient Outcome and Death (NCEPOD, 2015), discusses how to improve the care of patients who have a severe gastrointestinal bleed. Assessment of the overall quality of care showed that 45% (214/476) of cases had clinical factors identified as leading to less than good care.

Clinicians looking after patients with gastrointestinal bleeding have long realized that the care of these patients is less than satisfactory. A number of organizations have identified care as wanting and suggested improvements (British Society of Gastroenterology, 2007; Gyawali et al, 2007; Scottish Intercollegiate Guidelines Network, 2008; Academy of Medical Royal Colleges, 2010; National Institute for Health and Care Excellence, 2013, 2015). Progress remains slow and there is still significant variation in care despite recommendations and advances.

Gastrointestinal bleeding is one of the most common medical emergencies. The incidence of 1.33/1000 population equates to approximately 85 000 cases/year in the UK or one gastrointestinal bleed every 6 minutes (Rockall et al, 1995; Peura et al, 1997).

Gastrointestinal bleeding is the second commonest medical reason for transfusion in the UK, accounting for 14% of all blood transfusions (Wallis et al, 2006). Early treatment can reduce the number of units of blood received and complications, which has individual patient benefits and could reduce NHS transfusion costs.

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Gastrointestinal bleeding can occur anywhere from the mouth to the anus and is managed by both medical and surgical teams. It is traditionally split into upper gastrointestinal and lower gastrointestinal bleeding, both most commonly caused by benign diseases. Mortality is largely the result of complications associated with other illnesses (Marmo et al, 2008), rather than bleeding to death.

Around 15% of upper gastrointestinal bleeds occur in patients already in hospital and are associated with higher mortality rates (Peura et al, 1997; NCEPOD, 2016). The physiological stresses of the admission, medications including anticoagulants and the greater prevalence of comorbidities in a hospitalized population have all been implicated. Importantly, the burden of caring for patients with a gastrointestinal bleed, at least in the initial phase of their illness, may fall to any medical team, ward or hospital.

Good care for patients with gastrointestinal bleeding includes early appropriate investigation, endoscopic control of bleeding, interventional radiological control and surgery. Early endoscopic treatment in patients with severe bleeding results in better outcomes (Lim et al, 2011).

Time to Get Control

The NCEPOD study included assessment of care at an organizational level, clinical level within hospitals and external peer review of selected cases.

There were 31 412 patients identified who had experienced a gastrointestinal bleed during a 4-month period from 1 January 2013. Of these patients 15% were given four or more units of blood and were deemed to have more severe bleeding. From these a random sample of 618 patients was chosen for hospital clinician review and 485 patients for external peer review. In the study population 40% (245/615) of the patients with a severe gastrointestinal bleed were already inpatients being treated for another condition.

Only 44% (210/476) of patients included in this study received a standard of care that the reviewers would have accepted from their team, colleagues or trust. The most common deficiencies were in clinical care, with nearly half (45%) of the patients identified as having room for improvement. Overall 24% (142/599) of patients died, and 38% (89/236) of patients died who developed a gastrointestinal bleed while already in hospital. Reviewers felt that better management could improve outcomes.

From an organizational perspective 32% (60/185) of hospitals admitting patients with a gastrointestinal bleed did not have a 24/7 endoscopy service. In addition 73% (149/205) of hospitals could not provide 24/7 embolization of gastrointestinal bleeding on-site, and only 45% (64/143) had a formal network to combat this.

With regard to coordination of effective care, 59% (99/167) of hospitals had a clinical lead for upper gastrointestinal bleeds and 38% (57/151) of hospitals had one for lower gastrointestinal bleeds. While 87% (177/203) of hospitals had guidelines for management of patients with upper gastrointestinal bleeding only 25% (49/197) of hospitals had guidelines for management of patients with lower gastrointestinal bleeding.

There was delayed recognition of patients developing a gastrointestinal bleed while an established inpatient in 21% of cases (35/170). These patients present on any ward and in any hospital and are at risk of poorer outcomes (Rockall et al, 1995; British Society of Gastroenterology, 2007). In keeping with previous NCEPOD studies case reviewers felt that the first consultant review was not sufficiently prompt for the patient's condition in 16% of cases (56/352), and 64% (190/299) of patients with an upper gastrointestinal bleed did not have any risk assessment score calculated as recommended by the National Institute for Health and Care Excellence (2013, 2015). No single presentation was specific to upper or lower gastrointestinal bleeding.

Once the gastrointestinal bleed had been recognized, important basic investigations were omitted in 20% (47/238) of patients

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admitted with a gastrointestinal bleed and 33% (44/133) of inpatients. Cross-match or group and save were omitted in 5% of patients at initial presentation. Reviewers felt that medication was inappropriately continued in 9% (35/399) of patients and in a further 9% (37/404) early basic treatment was withheld.

Early endoscopy resulted in better management of blood products although blood product use was inappropriate in 20% (84/426) of cases. Reviewers felt that improved management would have reduced the need for blood products in 25% (113/457) of cases.

Reviewers found that in 31% (114/369) of patients with upper gastrointestinal bleeding the time to oesophago-gastroduodenoscopy was too slow. There was less delay to oesophago-gastroduodenoscopy if the first consultant review was by a gastrointestinal bleed specialist. Nearly three quarters (73/94) of patients with a shock index >1 did not have an oesophago-gastroduodenoscopy within 4 hours.

The study found that 6% (21/334) of patients should have had an interventional radiology procedure but did not. This is highlighted by the findings that nine patients had surgery because there was no interventional radiology available and 20 patients who underwent surgery did not have this discussed with interventional radiology despite most being suitable for intervention.

Implications for doctors

The main recommendations of the NCEPOD report are as follows:

- Patients with any acute gastrointestinal bleed should only be admitted to hospitals with 24/7 access to on-site endoscopy, interventional radiology (on-site or covered by a formal network), on-site gastrointestinal bleed surgery, on-site critical care and anaesthesia
- Hospitals that do not admit patients with gastrointestinal bleeds must have 24/7 access to endoscopy, interventional radiology and gastrointestinal bleed surgery for patients who develop a gastrointestinal bleed while as an inpatient for another condition by either an on-site service or a formal network
- Care pathways for all gastrointestinal bleeds should include, as a minimum, risk assessment, escalation of care, transfusion documentation, core procedural documentation, network arrangements and re-bleed plans. The pathway needs to be clearly documented
- All patients who present with a major upper or lower gastrointestinal bleed, either on admission or as an inpatient, should be discussed with the duty or on-call (out-of-hours) consultant responsible for major gastrointestinal bleeds within 1 hour of the diagnosis of a major bleed
- The ongoing management of care for patients with a major bleed should rest with, and be directed by the named consultant responsible for gastrointestinal bleeds, to ensure timely investigation and treatment to stop bleeding and reduce unnecessary blood transfusion
- As stated by National Institute for Health and Care Excellence (2013), all patients with a gastrointestinal bleed and haemodynamic instability should have 24/7 access to an oesophago-gastroduodenoscopy within 2 hours of optimal resuscitation.

Conclusions

There are still significant opportunities to improve the care of patients with gastrointestinal bleeding. The most striking findings of this study were that the organization of gastrointestinal bleeding services remain patchy and lacks coordination. Many hospitals do not have the facilities and/or staffing to deliver comprehensive care both during and out-of-hours, so many patients received inappropriate treatment while waiting for definitive control of bleeding. For example 9% of patients were given medical treatment that the NCEPOD reviewers felt was unnecessary and 25% were given blood products that could have been avoided.

The report recommends stopping the artificial separation of upper and lower gastrointestinal bleeding. To do this each hospital should appoint a lead clinician for gastrointestinal bleeds to take responsibility for the management of patients with upper and lower gastrointestinal bleeding. This clinician should develop pathways for patients with gastrointestinal bleeds that identify patients early who require specialist input, ensuring timely early investigation and treatment of bleeding. This service should include 24/7 access to a specialist, gastrointestinal bleed service, endoscopy, interventional radiology and surgery. Where necessary neighbouring hospitals should develop joint networks.

All doctors should be aware of the recommendations of this report as patients frequently present with gastrointestinal bleeding on their wards. **BJHM**

KEY POINTS

- There are still significant opportunities to improve the care of patients with gastrointestinal bleeding.
- Many hospitals do not have the facilities or staffing to deliver comprehensive care.
- The organization of gastrointestinal services remains patchy and lacks coordination.

Academy of Medical Royal Colleges (2010) Scope for Improvement: a toolkit for a safer Upper Gastrointestinal bleeding (UGIB) service (CROMES project). www.bsg.org.uk/clinical-guidance/endoscopy/aomrc-upper-gastrointestinal-bleeding-toolkit-cromes-project.html (accessed 20 May 2016)

British Society of Gastroenterology (2007) UK Comparative Audit of Upper Gastrointestinal Bleeding and the Use of Blood. www.bsg.org.uk/pdf_word_docs/blood_audit_report_07.pdf (accessed 20 May 2016)

Gyawali P, Suri D, Barrison I et al (2007) A discussion of the British Society of Gastroenterology survey of emergency gastroenterology workload. *Clin Med* **7**(6): 585–8 (doi: 10.7861/clinmedicine.7-6-585)

Lim L, Ho K, Chan Y et al (2011) Urgent endoscopy is associated with lower mortality in high-risk but not low-risk nonvariceal upper gastrointestinal bleeding. *Endoscopy* **43**(04): 300–6 (doi: 10.1055/s-0030-1256110)

Marmo R, Koch M, Cipolletta L et al (2008) Predictive factors of mortality from nonvariceal upper gastrointestinal hemorrhage: a multicenter study. *Am J Gastroenterol* **103**(7): 1639–47, quiz 1648 (doi: 10.1111/j.1572-0241.2008.01865.x)

National Confidential Enquiry into Patient Outcome and Death (2015) Time to Get Control? www.ncepod.org.uk/2015report1/downloads/TimeToGetControlFullReport.pdf (accessed 20 May 2016)

National Institute for Health and Care Excellence (2013) Acute upper gastrointestinal bleeding in adults. Quality Standard 38. www.nice.org.uk/guidance/qs38/chapter/list-of-quality-statements (accessed 20 May 2016)

National Institute for Health and Care Excellence (2015) Acute upper gastrointestinal bleeding in over 16s: management. NICE Clinical Guidance 141. www.nice.org.uk/guidance/cg141/resources/acute-upper-gastrointestinal-bleeding-in-over-16s-management-35109565796293 (accessed 20 May 2016)

Peura DA, Lanza FL, Gostout CJ, Foutch PG (1997) The American College of Gastroenterology Bleeding Registry: preliminary findings. *Am J Gastroenterol* **92**(6): 924–8

Rockall TA, Logan RFA, Devlin HB, Northfield TC (1995) Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom. *BMJ* **311**(6999): 222–6 (doi: 10.1136/bmj.311.6999.222)

Scottish Intercollegiate Guidelines Network (2008) Management of acute upper and lower gastrointestinal bleeding. Guideline No. 105. www.sign.ac.uk/guidelines/fulltext/105/ (accessed 20 May 2016)

Wallis JP, Wells AW, Chapman CE (2006) Changing indications for red cell transfusion from 2000 to 2004 in the North of England. *Transfus Med* **16**(6): 411–17 (doi: 10.1111/j.1365-3148.2006.00702.x)

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