

GUIDELINE FOR THE MANAGEMENT OF ACUTE SEVERE LOWER GI BLEEDING IN ADULT PATIENTS

Final Draft

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OVERVIEW

I. NEED TO FORMULATE A PRACTICAL GUIDELINE

Lower gastrointestinal bleeding (LGIB) accounts for approximately 20-33% of episodes of gastrointestinal (GI) hemorrhage, with an annual incidence of about 20-27 cases per 100,000 population in Western countries.¹ There are no actual figures on the incidence of LGIB in the country. A local study showed that LGIB was noted to be the most common indication for colonoscopy, accounting for 34% of all colonoscopies done in a major tertiary hospital.² Although LGIB is less common than upper GI bleeding, LGIB continues to be a frequent cause of hospital admission and is a factor in hospital morbidity and mortality.

Over the past years there has been a number of improvements in diagnosis and management of LGIB. The increased involvement of team specialists in the care of patients, improved diagnostic and therapeutic endoscopy and radiology, and increasing referrals for minimally-invasive surgical approaches have improved the way we manage patients. These changes have altered the manner by which we approach colonic bleeding. Thus, there is a need to examine and review these approaches which are said to be of benefit to patients and determine if these approaches are suited specifically for the Filipino people. There is a need to establish a local guideline that can be used by healthcare agencies including PhilHealth to establish a basis for performing endoscopic evaluations for lower GI bleeding cases.

II. STATEMENT OF INTENT (Preamble)

Guidelines for clinical practice are intended to suggest preferable approaches to particular medical problems as established by collection and interpretation of scientifically- validated researches derived from extensive review of published literature.

¹ Lower gastrointestinal bleeding (LGIB) accounts for approximately/ A nationwide study of the incidence and etiology of lower gastrointestinal bleeding. *Am J Gastroenterol*. Dec 2010;105(12):2636-41

² Review of the Indications and Diagnostic Yield of Colonoscopy at Manila Doctors Hospital: a 2-Year Retrospective Study (2006) (2006) Dr. Virna Josefa Amor, Manila Doctors Hospital

When data are not available or insufficient to withstand objective analysis, a recommendation may be made based on a consensus of experts.

This guideline is not intended to be taken as a standard of care. It should be distinguished with “Standards of Care”* which are determined on the basis of all clinical data available for the care of patients and are subject to change as scientific knowledge and technological advances evolve.

Guidelines are intended to be flexible, not necessarily regarded as the only acceptable approach. Given the wide range of choices in any health care problem, the attending physician should select the course best suited to the individual patient and the clinical situation presented.

III. OBJECTIVES

This guideline provides recommendations based on current evidences for best practice in the management of lower GI bleeding in adults. The guideline deals with the management of bleeding that is of sufficient severity to lead to admission to the hospital. *Bleeding of lesser severity is subject to elective investigation and is **excluded** in the discussion.*

IV. TARGET USERS OF THE GUIDELINE

This guideline shall be applicable to a range of medical professionals including nurses, emergency physicians, internists, family physicians, gastroenterologists and surgeons.

V. DEVELOPMENT OF THE GUIDELINE

A. The Technical Working Committee (TWC)

1. Members

The TWC is spearheaded by the current officers and members of the Board of Directors of the Philippine Society of Digestive Endoscopy. This is a collaborative effort of the Society with radiologists and surgeons who have been in

active practice for at least 5 years as diplomate or fellow of their respective specialty and are respected leaders in their own field of expertise.

2. Responsibilities of the TWC

The members of the TWC are expected to accomplish the ff:

- a) Prepare all the articles to be used during the evaluation of the scientific evidence
- b) Prepare the classification of evidences according to a set of criteria
- c) Construct a framework of algorithm of diagnostic and therapeutic options against the body scientific evidence
- d) Provide the basis of diagnostic and therapeutic decision based on literature
- e) Present the working draft of the guideline to the expert panel for deliberation
- f) Finalize the working documents and obtain the consensus of the panel for adoption

B. The Expert Panel

Criteria were formulated in the selection of the members of expert panel to ensure reliability and credibility of the review and approval of the working draft made by the TWC.

1. Selection of Members

Each member of the Expert Panel has been in active practice for the past 5 years as a diplomate or fellow of the PSDE

AND fulfills at least one of the following criteria:

- a. Recognized key leader in the field of gastroenterology/endoscopy who served as Past President of the PSDE or PSG
- b. Currently serving as a Section Head or Training Officer of an accredited training institution

c. Has contributed to a book publication in gastroenterology related to current topic

d. Has contributed local research output related to current topic

2. Responsibilities of the Expert Panel

a. Shall determine the value of scientific evidences as applicable in the Philippine setting

b. Shall resolve the issues regarding the controversies arising from the valuation of the scientific evidences

c. Shall determine the manner by which the controversies will resolved.

WORKING AGREEMENT, ETHICAL AND QUALITY STANDARDS

1. All members of the TWC and Expert Panel shall make disclosures of possible conflicts prior to the formulation and approval of the Guideline.
2. The working draft made by the TWC shall be presented to all members of the Expert Panel who shall be empowered to review, revise and approve the Guideline. Members who were not present during the Guideline Meeting shall be allowed to cast their opinion/vote within a designated time period.
3. The final output shall be presented to the General Membership during the Joint Annual Convention.
4. An independent Expert Facilitator shall guide and serve as resource person regarding the conduct and appropriateness of the whole guideline formulation.

ACUTE SEVERE LOWER GI BLEEDING GUIDELINE

Statement 1: Definition

1.1 Lower gastrointestinal bleeding generally refers to bleeding from the colon or anorectum.³

1.2 Acute severe lower gastrointestinal bleeding is defined as continued bleeding within the 1st 24 hours from initial consultation necessitating admission and with a transfusion requirement with at least 2 units of packed red blood cells or a decrease in hematocrit value of 20% or more.

Recommendation: Grade B

(Note: The grade of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.)

Acute onset of hematochezia is the most common clinical presentation of acute LGIB necessitating hospitalization. This guideline is NOT intended for patients with the following presentation where the likelihood of anemia or change in vital signs is low:

1. stool that is positive for occult blood,
2. chronic bleeding of obscure origin, or
3. obvious self-limited bleeding

Chronic, intermittent, or minimal LGIB which does not warrant hospital admission may be handled through OPD consultations.

Terminologies in GI Bleeding with reference to location are as follows:

Upper GI Bleeding refers to bleeding originating from esophagus to duodenum, Middle GI Bleeding from ligament of Treitz to ileum, and Lower GI Bleeding from colon to anorectum.

³ Sleisenger , 9th ed.

However, *the ligament of Treitz was not used as landmark for LGIB as it includes the small bowel which contributes only a small percentage (<10%) and is NOT included in this guideline.*

Limitations in these definitions are recognized, as the source of bleeding in a subset of patients with hematochezia can be from brisk bleeding from the upper gastrointestinal tract, and melena in some patients can be due to a source distal to the ligament of Treitz.

Other Terminologies:

1. Hematemesis - Refers to vomiting of blood from the upper GI tract or occasionally after swallowing blood from a source in the nasopharynx. Bright red hematemesis usually implies active bleeding from the esophagus, stomach or duodenum.
2. Coffee-ground vomitus - Refers to the vomiting of black material which is assumed to be blood. Its presence implies that bleeding has stopped or bleeding is not brisk.
3. Hematochezia - is the passage of fresh or altered blood per rectum usually due to colonic bleeding. Profuse upper GI or small bowel bleeding can result to hematochezia.
4. Shock – is a circulatory insufficiency resulting in inadequate oxygen delivery leading to global hypoperfusion and tissue hypoxia. In GI bleeding, shock is most likely to be hypovolemic (due to inadequate circulating volume from acute blood loss). The shocked, hypovolemic patient generally exhibits one or more of the following signs or symptoms:
 - a. tachycardia
 - b. tachypnea
 - c. hypotension
 - d. cool clammy skin
 - e. anxiety or confusion
 - f. oliguria

CAUSES OF ACUTE SEVERE LGIB

Although LGIB is defined as bleeding from the colon or anorectum, *approximately 15% of patients with acute severe hematochezia will have an upper GI source identified on upper endoscopy.*⁴ Small bowel sources account for 0.7- 9.0% of cases of severe hematochezia.⁵ The incidence of underlying causes of lower GI bleeding varies between age groups.

Common Causes of Severe Hematochezia

1. Diverticular Disease
2. Colon cancer or polyps
3. Infectious Colitis
4. Ischemic Colitis
5. Inflammatory Bowel Disease
6. Angioectasia
7. Postpolypectomy
8. Rectal Ulcer
9. Hemorrhoids
10. Anorectal source(unspecified)
11. Radiation colitis

(Source: Sleisenger 9th ed)

Statement 2: History, Physical Examination, Initial Laboratory Studies

2.1 A focused history and physical examination are essential in the initial evaluation of the patient with acute lower gastrointestinal bleeding.

⁴Jensen DM, Machicado GA. Diagnosis and treatment of severe hematochezia. The role of urgent colonoscopy after purge. *Gastroenterology* 1988;95(6):1569-74.

⁵Farrell JJ, Friedman LS. The management of lower gastrointestinal bleeding. *Aliment Pharmacol Ther* 2005;21(11):1281-98.

2.2 Initial laboratory testing should include complete blood count, blood typing, electrolytes, BUN, serum creatinine, albumin and coagulation profile. ECG should be done to assess cardiac status.

Recommendation: Grade A

History

Salient points in the history are the nature, duration and frequency of bleeding. Associated symptoms like abdominal pain, change in bowel habits, fever, tenesmus, weight loss should be asked. Past medical history include significant alcoholic history, previous bleeding episodes, trauma, past abdominal surgeries, previous peptic ulcer disease, history of radiation therapy to the abdomen and pelvis. Presence of major organ dysfunction with special attention to liver and hematologic diseases and patients with current/recent medications especially NSAIDs or aspirin should be elicited.

Physical Examination

A drop of >10 mm Hg or an increase in HR of >10 beats/min is indicative of acute blood loss of >800 ml (15% of total circulatory blood volume). Marked tachycardia and tachypnea, associated with hypotension and depressed mental status are indicative of blood loss of >1500 ml (30% circulatory blood volume).

The importance of rectal examination is emphasized.

Initial Laboratory Examinations

Initial laboratory studies should include: CBC, blood typing and cross matching, serum electrolytes, BUN, serum creatinine, albumin, and coagulation/clotting parameters.⁶ ECG should be done to assess cardiac status.

Initial hemoglobin/hematocrit values may not reflect the degree of blood loss due to volume contraction and may fall significantly after hydration. Coagulation profile is

⁶ Kollef MH, Canfield DA, Zuckerman GA. Triage considerations for patients with acute gastrointestinal hemorrhage admitted to a medical intensive care unit. Crit Care Med 1995;23:1048-654

important if patient has history of liver disease or is icteric, or presence of hematologic diseases, or if the patient has been taking anticoagulant medication.

Statement 3: Clinical Predictors of Severe LGIB

Clinical Predictors/Risk Factors Associated with Severe LGIB include:

- a. History**
 - Rectal bleeding on presentation**
 - Age more 60 years**
 - Presence of two co-morbid conditions**
 - Use of specific drugs such as NSAIDS, ASA and anticoagulants**
 - Inpatients admitted for other condition and subsequently bled after admission**
 - Syncope**

- b. PE**
 - Tachycardia**
 - Hypotension**
 - Non-tender abdomen**
 - Fresh blood on rectal exam**

Recommendation: Grade B

There is limited evidence available on prognostic scoring systems that could identify patients at high risk for severe LGIB. A scoring system utilizing 1) ASA use, 2) >2 co-morbid conditions, 3) HR>100/min, 4) non-tender abdomen on PE, 5) rectal bleeding within the 1st 4 hrs of evaluation, 6) syncope and 7) hypotension, was validated to determine the patients at risk for severe bleeding.⁷ A single-institution case identified similar factors.⁸

⁷ . Sleisenger/ Strate Et Al. Validation of A Clinical Validation Rule For Severe Lgib Am J Gastroenterol 2005; 100: 1821-7.

⁸

- Acute LGIB occurs most often in the elderly.
- The presence of two co-morbid conditions increases the chance of a severe bleed.
- Patients taking aspirin or NSAIDs are at increased risk of severe LGIB.⁹ Use of antiplatelets/anticoagulant drugs is an independent predictor of severe LGIB and is associated with adverse outcomes.¹⁰
- Patients who are hospitalized for another condition and who subsequently bleed after admission have mortality rate of 23%. Acute hemodynamic disturbance, a non-tender abdomen and gross rectal bleeding on initial examination are important predictors of subsequent severe bleeding.¹¹

Statement 4: Triaging of patients

4.1 Patients that can be managed in the OPD include: age of <60years, no evidence of hemodynamic compromise, no evidence of gross bleeding, and an obvious anorectal source of bleeding on rectal examination.

4.2 Patients considered for admission are those with any of the following: age >60 years old, with hemodynamic instability, gross bleeding on presentation, NSAID/aspirin intake, or significant co-morbidity.

Recommendation: Grade B

The triage and assessment of patients with acute LGIB is variable across different settings and in different regions. As mentioned, there are limited predictive scoring systems which can accurately assess risk at the point of initial triage and

⁹ Yong D, Grieve P, Keating J. Do nonsteroidal anti-inflammatory drugs affect the outcome of patients admitted to hospital with lower gastrointestinal bleeding? *N Z Med J* 2003;116(1178):25.

¹⁰ Hashash JG, Shamseddeen W, Skoury A, Aoun N, Barada K. Gross lower gastrointestinal bleeding in patients on anticoagulant and/or antiplatelet therapy: endoscopic findings, management, and clinical outcomes. *J Clin Gastroenterol*. 2009 Jan;43(1):36-42

¹¹ Longstreth GF. Epidemiology and outcome of patients hospitalized with acute lower gastrointestinal hemorrhage: a population-based study. *Am J Gastroenterol* 1997;92(3):419-24.

assessment. However, presence of certain factors can identify patients who can be referred to OPD and patients who need hospital admission.

TABLE 1: DECISION-MAKING FOR ADMITTING PATIENTS WITH LGIB

Consider for discharge or non-admission with outpatient follow up if:
Age <60 years, AND; No evidence of hemodynamic compromise, and; No evidence of gross rectal bleeding, and; An obvious anorectal source of bleeding on rectal examination.
Consider for admission if:
Age ≥60 years or; Hemodynamic disturbance, or; Evidence of gross rectal bleeding, or; Taking aspirin or an NSAID, or; Significant co-morbidity.

Statement 5: Multi-disciplinary Approach

Management by a multidisciplinary team of physicians should be considered initially and when deemed appropriate any time during the patient's hospital course.

Recommendation: Grade B

The team includes the gastroenterologist, interventional radiologist, surgeon and support care from pertinent specialties (cardio, pulmo, endo, etc). Cardio-pulmonary evaluation and clearance is needed especially in patients at high risk for endoscopy. Decision for management of the patient should be a consensus of the whole team.

Statement 6: Resuscitation and Admission to the Intensive Care Unit

6.1 Resuscitative measures must be established before diagnostic testing or specific therapeutic intervention.

6.2 Admission to the intensive care unit (ICU) should be done in patients with unstable vital signs not responding to initial resuscitative measures and for patients at risk for complications from co-morbid illnesses.

Recommendation: Grade B

The goal of resuscitation is the restoration of euvolemia and resultant stability in vital signs. Resuscitative measures include adequate intravenous access for fluid administration of normal saline solution to maintain systolic BP higher than 100 mm Hg and pulse lower than 100 beats/min. The amount of blood transfusion must be individualized. An indwelling urinary catheter should be placed to monitor urine output. Endotracheal intubation should be considered in patients with altered mental status and/or respiratory compromise.

Admission to the ICU is appropriate for those patients not responding to initial resuscitation measures such as persistent hypotension/tachycardia and need for blood transfusions. Admission to the ICU is not only for critical intervention but for monitoring and early detection of clinical deterioration. Initial monitoring in an intensive setting is reasonable for the patient with significant co-morbid illness, even if vital signs have stabilized with initial resuscitation.

Statement 7: Nasogastric Tube (NGT) Insertion

NGT insertion should be done on all patients with severe hematochezia. NGT insertion, however, can be omitted if there is already an obvious source of rectal bleeding.

Recommendation: Grade B

Patients with hematochezia most frequently bleed from a colonic source. However, when bleeding is brisk, an upper gastrointestinal source of bleeding may present as hematochezia. NGT insertion should therefore be performed. The presence of a bloody aspirate confirms the presence of upper gastrointestinal source. The absence of blood, however, does not rule out upper gastrointestinal bleeding, as blood from a duodenal source may not reflux into the stomach.

Statement 8: Upper GI Endoscopy

Upper GI endoscopy is indicated in patients with massive hematochezia and hemodynamic compromise except when a copious amount of non-bloody bile is recovered from the NGT while the patient is actively passing red blood per rectum.

Recommendation: Grade B

In the patient with hematochezia, an upper gastrointestinal bleeding source must be considered. A nasogastric aspirate showing copious amounts of bile and negative for blood makes an upper gastrointestinal source unlikely. Upper gastrointestinal endoscopy should be performed if the nasogastric aspiration shows evidence of upper gastrointestinal bleeding.¹²

Upper GI endoscopy should be considered in patients with history of cirrhosis, peptic ulcer disease, or complain of significant upper GI symptoms.¹³

¹² ACG Practice Guideline on the Management of the Adult Patient with Acute Lower Gastrointestinal Bleeding. Accessed thru the ACG website.

¹³ Sleisenger and Fordtran's Gastrointestinal and Liver Disease. *9th ed*

Statement 9: Colonoscopy

9.1 Colonoscopy is the recommended diagnostic tool for localization of site and determining cause of bleeding. It should be performed as early as within 24 hours of initial presentation if possible and after adequate resuscitation has been administered.

9.2 Flexible sigmoidoscopy or anoscopy may be considered in circumstances when colonoscopy cannot be done.

Recommendation: Grade B

Urgent colonoscopy with a rapid bowel purge has been shown to be safe, provide important diagnostic information, and allow therapeutic intervention.¹⁰ It should be done as early as within 24 hours because most bleeding stops spontaneously. The overall rate of detecting a presumed or definite cause of LGIB ranges from 48 to 90%. Colonoscopy may be performed after blood transfusions have been initiated and adequate bowel preparations have been given. Colonic preparation facilitates endoscopic visualization, improves diagnostic yield and shortens the procedure time. It may improve the safety of the procedure by decreasing the risk of perforation.

Review of two RCT's on urgent colonoscopy (done within eight hrs) vs standard colonoscopy (done within 48 hours); showed the ff findings:^{14 15}

1. Improved diagnosis but not improved outcomes with urgent colonoscopy compared with standard colonoscopy
2. Little difference in outcome between urgent colonoscopy with elective colonoscopy although a definite source of bleeding was found more often in urgent colonoscopy

Review of cohort studies showed that: ¹⁶

¹⁴ State LL, Syngal S. Timing of colonoscopy: impact on length of hospital stay in patients with acute lower intestinal bleeding. Am J Gastroenterol 2003;98:317-22.

¹⁵ Green BT, Rockey DC, Portwood G, Tamasky PR, Guarisco S, Branch MS, et al. Urgent colonoscopy for evaluation and management of acute lower gastrointestinal hemorrhage: a randomized controlled trial. Am J Gastroenterol 2005;100(11):2395-402.

1. Length of hospital stay was shorter in patients who underwent colonoscopy within 24 hours of admission than those undergoing colonoscopy after 24 hours.

2. Colonoscopy be deferred until patients are hemodynamically stable, have adequate bowel preparation to optimize diagnostic accuracy and upper GI bleeding has been excluded by upper endoscopy.

Flexible sigmoidoscopy can evaluate the rectum and left side of the colon and can be performed without the standard colonoscopy bowel preparations. A diagnosis can be found in 9% of cases. If enemas are used to cleanse the distal colon, urgent flexible sigmoidoscopy can be useful in patients suspected to have ulcerative colitis, radiation proctitis, postpolypectomy bleeding or internal hemorrhoids.

Anoscopy can be useful for patients in whom actively bleeding hemorrhoids or other anorectal diseases are suspected such as anal fissures and fistulas. Patients more than 50 yrs old will require colonoscopy on elective basis to evaluate the rest of the colon.

Statement 10: Enteroscopy/Capsule Endoscopy

10.1 If source of bleeding is not identified by EGD and colonoscopy, capsule endoscopy or enteroscopy may be done if facilities and expertise are available in the hospital.

10.2 Capsule endoscopy has the advantage of being a non-invasive procedure. If bleeding is active, enteroscopy is the preferred procedure because of its potential for therapeutic intervention.

Recommendation: Grade A

¹⁶ Schmulewitz N, Fisher DA, Rockey DC. Early colonoscopy for acute lower GI bleeding predicts shorter hospital stay: a retrospective study of experience in a single center. *Gastrointest Endosc* 2003;58(6):841-6.

In cases of lower gastrointestinal bleeding where no plausible colonic source is identified, evaluation of the small bowel may be necessary. Capsule endoscopy and enteroscopy are now the preferred methods to examine and rule out midgut lesions. Diagnostic efficacy of DBE for mid-gastrointestinal bleeding is similar to video capsule endoscopy in several comparative studies.¹⁷

Statement 11: Use of Ancillary Imaging Studies

11.1 If endoscopy is not available, contraindicated, failed or equivocal, and patient is still actively bleeding, nuclear scintigraphy (RBC-tagging) is the next diagnostic test of choice to assist in the localization of the site of bleeding.

11.2 If site is identified by RBC-tagging and patient is still actively bleeding, the team may proceed directly with digital subtraction angiography so therapeutic intervention can be performed.

11.3 If colonoscopy and RBC-tagging cannot identify the source of bleeding, computed tomography angiography or digital subtraction angiography may be done.

11.4 Emergency barium enema has no role as a diagnostic test in the evaluation of acute severe LGIB.

Recommendation: Grade A

Studies reviewed the role of technetium-labeled RBC scintigraphy (RBC-tagging) in the preoperative localization of acute LGIB.¹⁸ In contrast to CT angiography, while RBC-tagging may identify the site of bleeding, it cannot determine the underlying cause. Also, RBC-tagging may not be useful if bleeding has stopped. One study showed that it

¹⁷ Pohl J. ESGE Guidelines: flexible enteroscopy in small-bowel diseases Endoscopy 2008; 40: 609 ± 618

¹⁸ Suzman MS, Talmor M, Jennis R, Binkert B, Barie PS. Accurate localization and surgical management of active lower gastrointestinal hemorrhage with technetium-labeled erythrocyte scintigraphy. Ann Surg 1996;224(1):29-36.

is more useful with patients with active significant hemorrhage (>2 units transfused in the past 24 hours). Overall positive diagnostic rate is approximately 45% and 78% accuracy rate for localizing the bleeding site.

Other advantages of RBC scintigraphy include: 1) relatively cheaper cost compared to other modalities, 2) ability to detect arterial and venous bleeding, 3) use in intermittent or prolonged evaluation, and potential to guide clinicians where to concentrate for future evaluation or intervention.

Disadvantages of delayed scans are misleading and determination of the specific cause of bleeding often depends on endoscopy or surgery.

CT angiography can identify the anatomic site and nature of the lesion. It provides valuable information that can be used to determine the appropriateness of catheter angiography and guide mesenteric catheterization if a bleeding source is localized. CT angiography is less invasive compared to digital subtraction angiography.

Other advantages of CT angiography are: 1) provides rapid non-invasive accurate localization, 2) capable of visualizing structural abnormalities such as diverticulum, angiodysplasia, mass lesions, and other structures including the portal circulation.

However, once the site of bleeding is located by RBC-tagging and patient is still actively bleeding, the team may proceed with digital subtraction angiography so that therapeutic intervention like embolization can be performed to control bleeding.

Emergency barium enema has no role in patients with acute severe LGIB because it is not diagnostic and will make urgent colonoscopy more difficult by impairing visualization.¹⁹

Statement 12: Option for Watchful Observation

If all tests turn out negative, may do watchful observation and reevaluate patient when bleeding recurs.

¹⁹ ASG Guideline

Recommendation: Grade D

Statement 13: Endoscopic Intervention

In patients with severe LGIB, colonoscopic hemostasis is an effective means of controlling hemorrhage when appropriate expertise is available.

Recommendation: Grade B

A number of studies were identified that describe the effectiveness of colonoscopic hemostatic techniques (adrenaline injections, bipolar coagulation or endoscopic hemoclipping)

In patients who were identified to be bleeding secondary to diverticulosis, colonoscopic hemostatic techniques were associated with high technical success in 90-100% of cases, clinical success rates of 70-100% and no significant complications.

In patients who had bleeding following polypectomy or biopsy, colonoscopic hemostatic techniques were associated with high technical success in 99-100% of cases, clinical success rates of 95-100% and no significant complications.

Statement 14: Radiologic Intervention

Catheter Angiography should be reserved for the following patients:

- 1. Endoscopy could not be done due to ongoing massive bleeding**
- 2. Positive RBC- tagging or CT angiography with therapeutic intent**
- 3. Confirmation of other radiologic results**

Recommendation: Grade B

In patients with poor localization and ongoing bleeding, early catheter angiography and embolization using superselective techniques can be attempted.

Single-cohort studies were identified that analyzed embolization and superselective embolization in the treatment of LGIB. Embolization was associated with

high technical success in 89-100% of cases, clinical success rates of 80-91%, delayed rebleeding in 27% and 11% of patients required colectomy for colonic ischemia.

Statement 15: Surgical Intervention

Surgery for massive LGIB should be considered as a last option and may be necessary for a minority of patients only.

Recommendation: Grade A

Factors that may influence the decision for surgical intervention include:

- a. Persistent hemodynamic instability despite aggressive resuscitation
- b. Patients who need 4 or more blood transfusions in 24 hours to achieve and maintain hemodynamic stability
- c. Patients who require 10 or greater units blood transfusion overall
- d. Recurrent major bleeding within the same hospitalization

In these situations, operative intervention during the same hospitalization is associated with better long-term outcomes.

If the decision to perform surgery is made, it is ideal that prior localization of the bleeding site be made either endoscopically or radiographically so that segmental resection can be performed accurately and quickly. The risk for rebleeding after surgical resection is significantly increased when prior localization is poor or inadequate. Blind segmental resection based on clinical suspicion alone is associated with an unacceptably high rate of rebleeding.

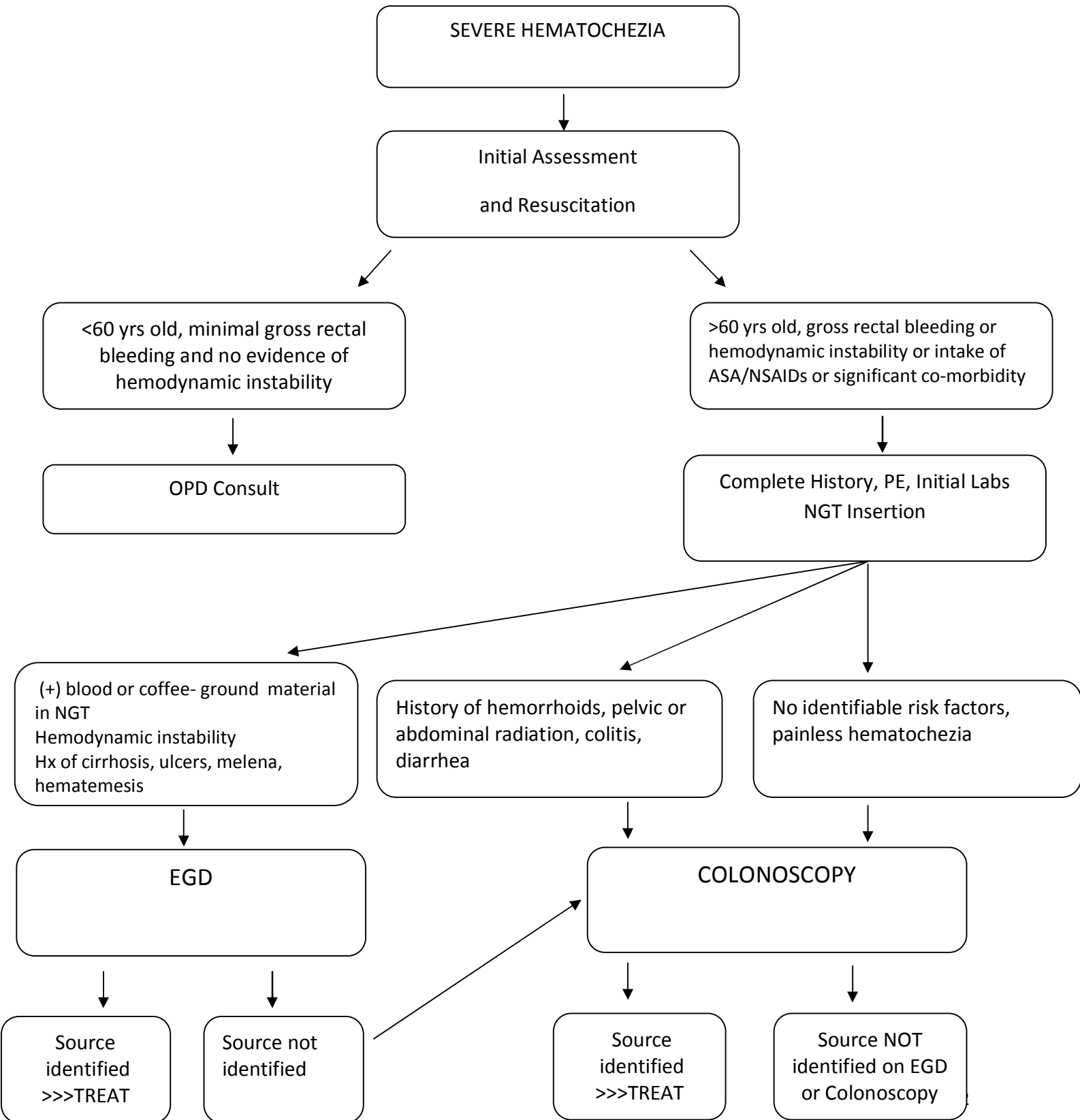
If the decision to perform surgery is made without prior localization of the source, then the operation must be performed with the capability to do intra-operative endoscopy. In this way accurate localization and appropriate segmental resection can be still be achieved.

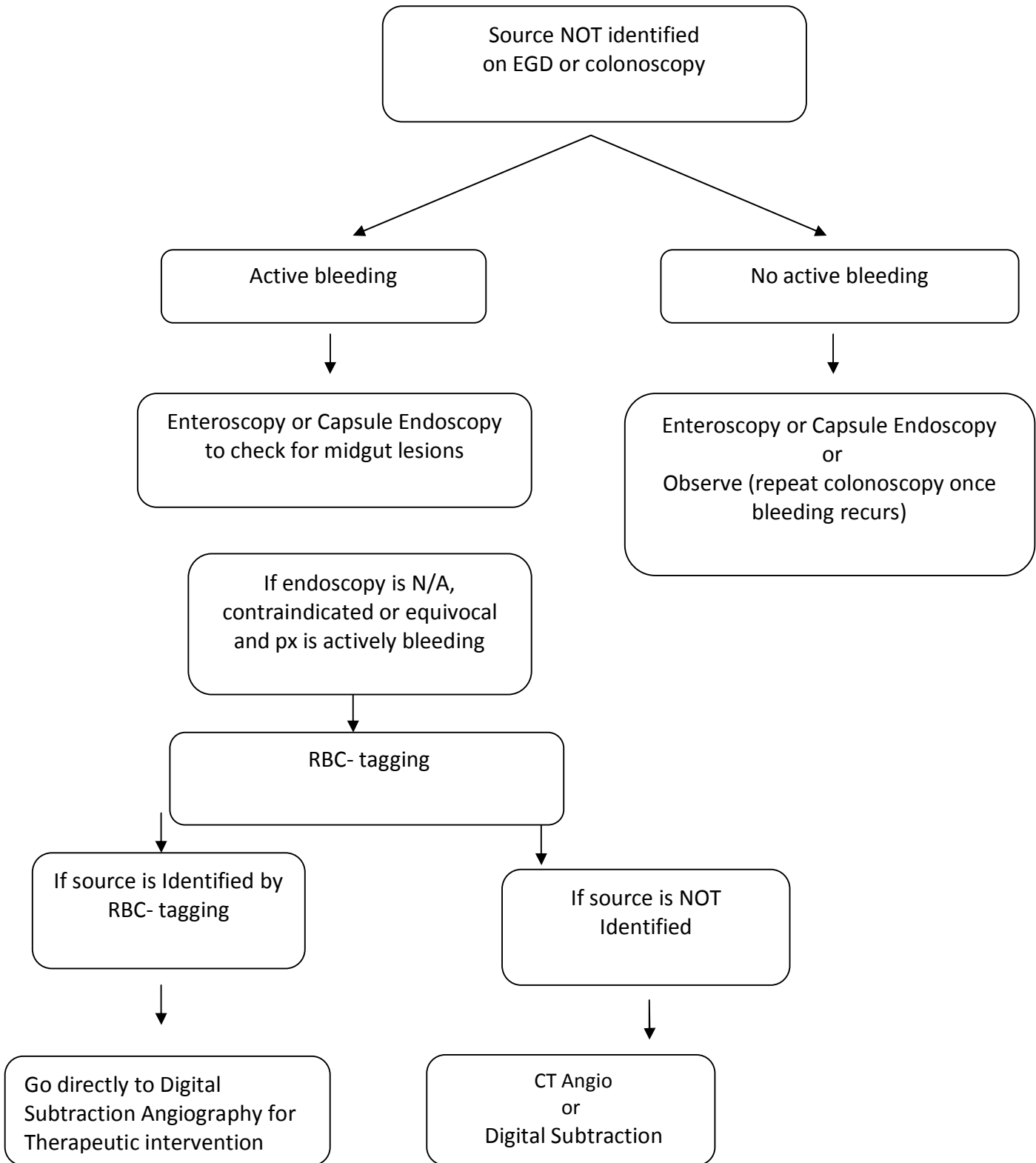
If localization of the bleeding site is impossible both pre- and intra-operatively, then total colectomy is recommended because it results in less risk for post-operative bleeding compared to blind segmental resection (0-4 % vs. 0-14%), with comparable morbidity and mortality. However, in some cases total colectomy may result in intractable diarrhea and should therefore be reserved only for unstable patients with unidentifiable bleeding sites.

While major and massive LGIB resolve on their own in 80% of cases, they may recur in another 25%. And after a second episode of major/massive LGIB, the risk for rebleeding increases and exceeds 50%. Risk factors for rebleeding include severity of the first bleed, major medical comorbidities, and the need for anticoagulation. In these situations, prophylactic resection may be warranted, particularly if the source of bleeding has been identified and localized.

Nowadays there are options for minimally invasive surgery aside from standard exploratory laparotomy. Most of these minimally invasive (laparoscopic) procedures are often done together with intra-operative endoscopy by a team of experts, and result in less post-operative morbidity and pain, with earlier recovery and discharge.

ALGORITHM FOR THE MANAGEMENT OF ACUTE SEVERE LOWER GASTROINTESTINAL BLEEDING





SUMMARY

A consensus on a single approach to patients with severe LGIB has not been reached and the approach usually depends on local resources and expertise. Thus this guideline was formulated taking into consideration the resources and expertise available in our country.

RESOURCE MATERIALS

Websites

1. ACG Practice Guideline on the Management of the Adult Patient With Acute Lower Gastrointestinal Bleeding. Accessed thru the ACG website.
2. Management of acute upper and lower gastrointestinal bleeding: A national clinical guideline. (SIGN). Accessed thru the Scottish Intercollegiate Guidelines Network website.
3. ASGE Guideline: the role of endoscopy in the patients with lower GI bleeding. Accessed thru the ASGE website.
4. ACG Practical Guideline on the Diagnosis and Management of Diverticular Disease of the Colon in Adults. Accessed thru the ACG website
5. European Society of Gastrointestinal Endoscopy (ESGE) Guidelines: flexible enteroscopy for diagnosis and treatment of small-bowel diseases. Accessed through the ESGE website.
6. University of Pennsylvania Health System (UPHS). Guideline: Management of acute lower GI bleeding. Philadelphia (PA): University of Pennsylvania Health System (UPHS); Jan 2009. Accessed through the National Guideline Clearing House.

Journals

- 1 Lower gastrointestinal bleeding (LGIB) accounts for approximately/ A nationwide study of the incidence and etiology of lower gastrointestinal bleeding. *Am J Gastroenterol*. Dec 2010;105(12):2636-41
2. Sleisenger/ Strate Et Al. Validation of A Clinical Validation Rule For Severe Lgib Am J Gastroenterol 2005; 100: 1821-7.
3. Velayos FS, Williamson A, Sousa KH, Lung E, Bostrom A, Weber EJ, et al. Early predictors of severe lower gastrointestinal bleeding and adverse outcomes: a prospective study. *Clin Gastroenterol Hepatol* 2004;2(6):485-90.

4. Kollef, MH, Canfield, DA, Zuckerman, GA. Triage considerations for patients with acute gastrointestinal hemorrhage admitted to a medical intensive care unit. *Crit Care Med* 1995;**23**: 1048–1054
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7. Eisen GM, Dominitz JA, Faigel DO, et al. ASGE Standards of Practice Committee. An annotated algorithmic approach to acute lower gastrointestinal bleeding. *Gastrointest Endosc* 2001;53:859-63)
8. State LL, Syngal S. Timing of colonoscopy: impact on length of hospital stay in patients with acute lower intestinal bleeding. *Am J Gastroenterol* 2003;98:317-22.
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