1. Introduction

Upper gastrointestinal (UGI) bleeding in children poses a challenge to paediatricians and paediatric surgeons. Significant bleeding is associated with increased morbidity and mortality. Nationally there are no established guidelines for the initial as well as subsequent management of upper gastrointestinal bleeding in children. Most of the data used in literature published on this subject are extrapolated from adult work.

2. Scope

The following guideline applies to all medical staff when they consider the management of upper gastrointestinal bleeding in children within the Children’s Hospital or in the Paediatric Emergency Department.

3. Guidance Statement

3.1 Initial Assessment

• Is it haematemesis?
• Is it malaena?
• Is patient on NSAID or Aspirin therapy?
• Has there been history of corrosive ingestion?
• Could the child have swallowed a foreign body (FB)? Remember there may be no knowledge of FB. Consider CXR if no obvious cause of GI haemorrhage.

3.2 Identify high risk patients

• Active ongoing bleeding
• Are varices a potential cause?
• PMH: liver, heart, renal failure, congenital heart disease, coagulopathy
• Hb <8 g/dl
• Shock: Tachycardia, Poor perfusion, acidosis, drowsy or hypotensive

3.3 Urgent investigations

• Immediate venous gas to assess pH, lactate, base Xs and haematocrit
• FBC
• U&E
• LFT
• Clotting profile
• X-match (2-4 units if severe bleeding)
• CXR + AXR: History suggestive of Foreign Body (FB) Ingestion Or No History of FB but <2 years to exclude FB e.g. Button battery.
3.4 **Resuscitation**
- After dealing with Airway and breathing site 2 Large bore cannulae
- Give fluid as per APLS guideline for Haemorrhage: 10ml/kg aliquots up to 40ml/kg then blood
- Aim for normal blood pressure; do not haemodilute if no clear indication for IV fluids, use blood ASAP if hypotensive (not crystalloid)
- Remember to give platelets FFP and Cryo in significant haemorrhage. Activate the UHL Massive Haemorrhage Protocol in these cases to improve speed of product delivery.
- Tranexamic Acid Infusion should be considered in all age groups (15mg/kg up to a maximum of 1g as per RCPCH trauma protocol)
- Insert large bore NGT (DO NOT LAVAGE WITH ICE WATER)

3.5 **Inform on call paediatric surgical SpR or Consultant and if patient of concern, involve ED and PICU consultants early on if life threatening or unable to transfer.**

3.6 **Pharmacological management**
- Pre-endoscopic PPI therapy may be considered, but should not delay endoscopy
  i. Omeprazole IV – refer to CH IV monograph for dosing information – begin at the higher 1mg/kg/dose (max 40mg) OD
  ii. Oral Omeprazole can be used for longer term management post acute episode
- **DO NOT USE RANITIDINE, AS INEFFECTIVE IN REDUCING REBLEEDING OR MORTALITY**
- Octreotide should be started as soon as varices suspected or if unsure about source of bleeding, continued 3-5 days post endoscopy
  i. Octreotide IV – continuous infusion 1-5 microgram/kg/hour.

3.7 **Endoscopic management**
- Early endoscopy (after stabilisation) in cases of severe UGI bleeding (see flow chart)
- Endoscopy within 24 hours for other cases
- Consider calling adult bleed rota team during life-threatening haemorrhage
- For cases where an ulcer is bleeding at endoscopy: clips, thermocoagulation, sclerosant or foam should be used alone or in combination with 1 in 10,000 strength adrenaline injection
- For variceal bleeding endoscopy within 12 hours to make diagnosis and treatment using sclerotherapy or banding
- Patients with bleeding ulcers should be tested for H. pylori and receive eradication therapy
- Have Sengstaken tube available

3.8 **Surgical management**
- Consider 2nd endoscopy in cases who rebleed or failed therapy at first endoscopy
• In unstable patients or bleeding uncontrolled after endoscopy, discuss with radiologist need for CT Angio and or Intervention. **THIS SHOULD BE CONSULTANT DECISION**
• Consider surgery if there is continuous bleeding

### 3.9 Foreign Bodies

In all scenarios below, check for total **duration** of symptoms and consider CT scan if > than 3 days.

- **Coins**
  - Upper oesophagus on initial X ray: contact ENT for removal
  - Lower oesophagus on initial X ray: repeat XR at 6-12 hours after ingestion and remove if still in oesophagus. If in stomach on 2nd Xray removal not indicated.

- **Button batteries**
  - Anywhere in oesophagus on initial X-ray, remove (ENT for Upper, Gen Surgery for Lower)
  - In stomach on initial X-ray, Repeat XR after 6-12 hours after ingestion. If still present, in stomach remove. If beyond stomach no action needed

- **Magnets; as for batteries above**

- **Sharp metallic objects**
  - In oesophagus, remove
  - In stomach, will usually pass spontaneously

### 4. Education and Training

No specific training required. Awareness raised in Children’s Hospital Clinical Governance Half-day (Apr 2013) and in M&M discussions.

#### 4. Monitoring and Audit

<table>
<thead>
<tr>
<th>Key Performance Indicator</th>
<th>Method of Assessment</th>
<th>Frequency</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of X Rays and Imaging</td>
<td>Audit of Incident Reports</td>
<td>Annually</td>
<td>Mr A Rajimwale</td>
</tr>
<tr>
<td>Resuscitation and Escalation</td>
<td>Audit of Incident Reports</td>
<td>Annually</td>
<td>Dr R Rowlands</td>
</tr>
</tbody>
</table>

The Audit results will be discussed in the Children’s Hospital and Paeds ED Audit and Governance meetings where Actions required and lessons to be disseminated will also be identified

### 5. Legal Liability Statement for use in Guidance Documents

**Title:** Standard Operating Procedure for Upper Gastrointestinal Bleeding  
**Authors:** Mr H Dagash, Dr F Davies, Mr S Nour.  
**Written:** December 2013  
**Contact:** Mr A.Rajimwale, Dr R. Rowlands  
**Last review:** May 2016  
**Approved by:** Childrens Clinical Practice Group  
**Next Review:** May 2019  
**Trust Rev:** C102/2016  
**Page:** 3 of 5

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Guidelines or Procedures issued and approved by the Trust are considered to represent best practice. Staff may only exceptionally depart from any relevant Trust guidelines or Procedures and always only providing that such departure is confined to the specific needs of individual circumstances. In healthcare delivery such departure shall only be undertaken where, in the judgement of the responsible healthcare professional, it is fully appropriate and justifiable - such decision to be fully recorded in the patient’s notes.

6. Supporting Documents and Key References


8. Key Words

Upper, Gastrointestinal, GI, Bleeding, children, haemorrhage.
Management Flowchart

Assess Bleeding
ABC (inc oxygen) IV access (x2 large cannulas) Bloods: FBC, U&E, LFT, Clotting, BM, X-match
INFORM O/C PAEDIATRIC SURGEON IN ED INFORM DOCTOR IN CHARGE

Fluid resus (age appropriate)
Shock ? Start crystalloids
Avoid IV fluids if no shock
Large bleed and shock?
Transfuse Blood
(Ratio 4 Blood: 3 FFP: 1 Platelets
Inform lab : massive transfusion protocol

Haematemesis
Malaena
Duration
NSAIDs, Aspirin
Corrosive ingestion
? F.B ingestion (esp. button battery)

Mild bleeding
Small gastric aspirates
No anaemia
No hypotension
Admit
Observation

Moderate bleeding
Active bleeding
Anaemia
BP, HR
Admit
Endoscopy ASAP

Severe bleeding
Continuing bleeding
Heart Failure
Organ dysfunction
ED resus or ICU
Resuscitate
Endoscopy ASAP

Variceal bleeding
Will have known liver disease
Consider
Sengstaken/Minnesota tube
Octreotide (bolus then
Urgent endoscopy
Banding
Sclerotherapy +/- Adrenaline

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