Upper GI bleed

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Introduction

- Gastrointestinal bleeding is one of the commonest medical emergencies
- The incidence rate of 1.33/1000 population equates to approximately 85,000 cases/year in the UK or one gastrointestinal bleed every 6 minutes
- Several surveys have shown that current services are inadequately resourced, particularly in the out-of-hours period

A Common Clinical Problem

- 1 - 2% of all hospital admissions
  - Most common diagnosis of new ICU admissions
- 5 - 10% mortality
- 80% of GI bleeds stop spontaneously
  - Those with massive bleeding need urgent intervention

Introduction

- Second commonest medical reason for transfusion, accounting for 14% of all blood transfusions
- Early treatment can reduce the number of units of blood received and complications
- Managed by both medical and surgical teams
- Traditionally split into upper GI and lower GI bleeding

Introduction

- There has been a focus on upper GI bleeds including a large BSG audit of 6750 patients in 2007 and subsequent quality improvement initiatives
- Conversely the review of services for lower GI bleeds has been lacking

GI bleed presentation

- Melaena / haematemesis
- Collapse
- Dizziness
- Hypotension

Causes of acute upper gastrointestinal haemorrhage

Diagnosis	Approx %
Peptic ulcer	35-50 %
Gastroduodenal erosions	8-15 %
Oesophagitis	5-15 %
Mallory Weiss tear	15%
Varices	5-10 %
GI cancer	

What is ‘coffee grounds’?

Delay in recognition of bleed

Table 4.8 Delay in recognising the inpatient's GI bleed – reviewers' opinion

Delay	Number of patients	%
No	135	79.4
Yes	35	20.6
Subtotal	**170**	
Unknown	10	
Total	**180**	

Initial risk assessment score used

Table 4.9 Initial risk assessment score used

Risk assessment score used	Number of patients	%
Yes	125	34.1
No	242	65.9
Subtotal	**367**	
Unknown	108	
Not answered	15	
Total	**490**	

Time to OGD by blood usage

Table 4.29 Time to OGD by appropriate blood usage

	Better management may have improved blood usage				
Time to OGD reasonable	**No**	**Yes**	**Subtotal**	**Not answered**	**Total**
Yes	192	31	223	12	**235**
No	65	39	104	6	**110**
Subtotal	**257**	**70**	**327**	**18**	**345**
Unknown	10	1	11	1	**12**
Total	**267**	**71**	**338**	**19**	**357**

Time to OGD

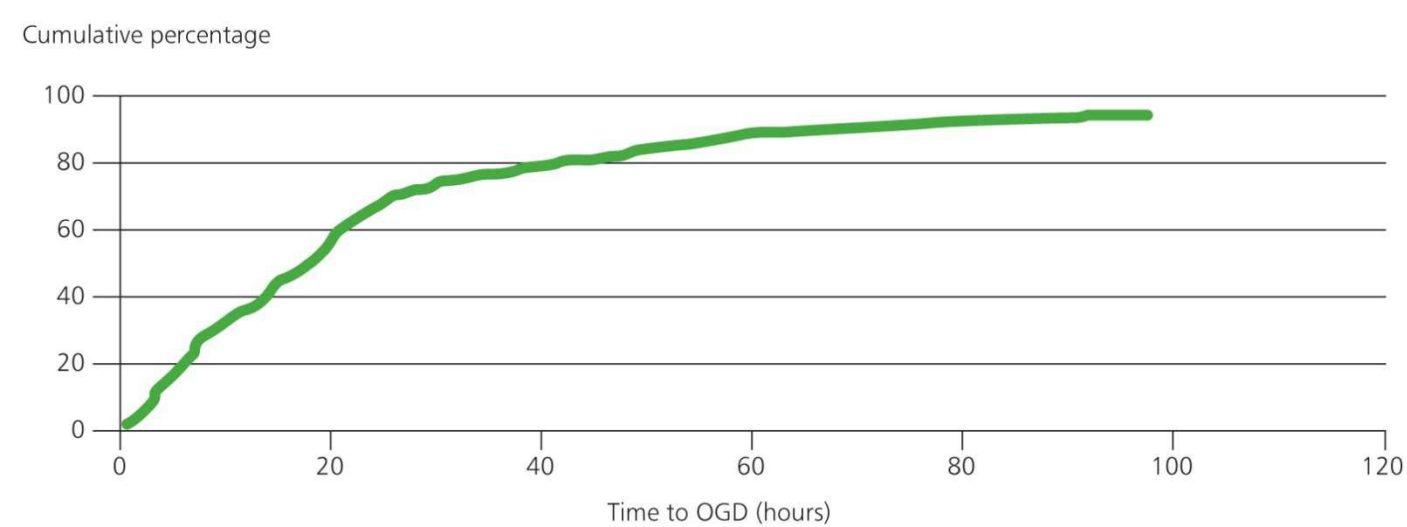


Figure 6.1 Time to OGD

- NICE QS 38 2013 suspected UGIB OGD < 24hours
- All patients = time of admission or presentation (IPs)
- 65% (205/316) < 24 hours

Shock Index and time to OGD

- NICE QS - in those with haemodynamic instability
  OGD < 2 hours of optimal resuscitation
- 8.5% (8/94) SI >1 had OGD < 2 hours
- < 4 hours
- 22% (21/94) < 4 hours with SI >1

Table 6.3 Time to endoscopy vs. shock index

Time to endoscopy	Shock index at presentation ≤1	%	Shock index at presentation >1	%
<2 hours	4	1.8	8	8.5
2-4 hours	16	7.1	13	13.8
4 to 24 hours	119	52.9	53	56.4
>24 hours	86	38.2	20	21.3
Total	**225**		**94**	

1 - Recognition
Immediately

- Haematemesis, Melaena, Bright red rectal bleeding

- PR examination (all patients with confirmed or suspected GI bleed should have PR examination performed on arrival)

2 - Assessment

Immediately

a) ABCDE approach: consider Shock index (SI): ratio between HR and systolic BP >0.9 - detect early haemorrhagic shock

b) Risk assessment: Use Blatchford score (use Rockall post endoscopy)
Blatchford score - assess probability for intervention (blood transfusion, endoscopy)-
Score 0 - low risk, consider early discharge
Score >0 - manage as in patient
Score >5 - high risk for intervention

c) Blood sampling for ABG (Hb, PH, Lactate), FBC, Clotting, U&Es, LFTs and cross match, ECG, Drugs History - Clopidogrel, aspirin, warfarin, NOAC

RS VS GBS

Table 1 | Glasgow–Blatchford score assessment criteria

Risk factors at presentation	Threshold	Score
Blood urea nitrogen (mmol/l)	6.5–7.9	2
	8.0–9.9	3
	10.0–24.9	4
	≥25.0	6
Hemoglobin for men (g/l)	120–130	1
	100–119	3
	<100	6
Hemoglobin for women (g/l)	100–120	1
	<100	6
Systolic blood pressure (mmHg)	100–109	1
	90–99	2
	<90	3
Heart rate (bpm)	>100	1
Melena	Present	1
Syncope	Present	2
Hepatic disease	Present	2
Cardiac failure	Present	2

Total score (0–23). Patients with scores >0 are considered to be at high risk. Permission obtained from Elsevier Ltd © Blatchford, O. *et al. Lancet* **356**, 1318–1321 (2000).

Table 2 | Rockall score assessment criteria

Variables	Points
Age (years)	
<60	0
60–79	1
≥80	2
Hemodynamic shock	
Heart rate >100 bpm	1
Systolic blood pressure <100 mmHg	2
Coexisting illnesses	
Heart failure, ischemic heart disease	2
Renal failure, hepatic failure, metastatic cancer	3
Endoscopic signs (diagnostic)	
No lesion observed, or Mallory–Weiss tear	0
Peptic ulcer, erosive disease, esophagitis	1
Cancer of the upper gastrointestinal tract	2
Endoscopic signs (hemorrhagic)	
Clean-base ulcer or flat, pigmented spot	0
Visible blood, active bleeding, visible vessel, adherent clot	2

Scores range from 0 to 11 and are divided into three categories of risk: low risk ≤2, moderate risk 3–5, high risk ≥6. Permission obtained from BMJ Publishing Group Ltd © Rockall, T. A. *et al. Gut* **38**, 316–321 (1996).

3 - Resuscitation
to start within 30 minutes

Two large venflon - O2, fluid resuscitation - saline colloid/ Blood transfusion - **(consider activating massive haemorrhage protocol early if ongoing shock or massive haemorrhage)**

a)Aim - systolic BP >100 (90-100 systolic in variceal bleed), satisfactory urine output, Use fluid boluses, reassess after each bolus

b)Aim HB 8-10 (for variceal bleed, HB7): Avoid over or under transfusion. Blood transfusion for: Hb less than 7.0, ongoing shock/ haemorrhage

c)Monitoring every 15 minutes for the first hour

d)Keep patient NBM

e)If suspected peptic ulcer bleed give bolus IV PPI (not in NICE guidance, but emerging evidence), variceal bleed, give terlipressin 2mg (antibiotics in suspected variceal bleed)

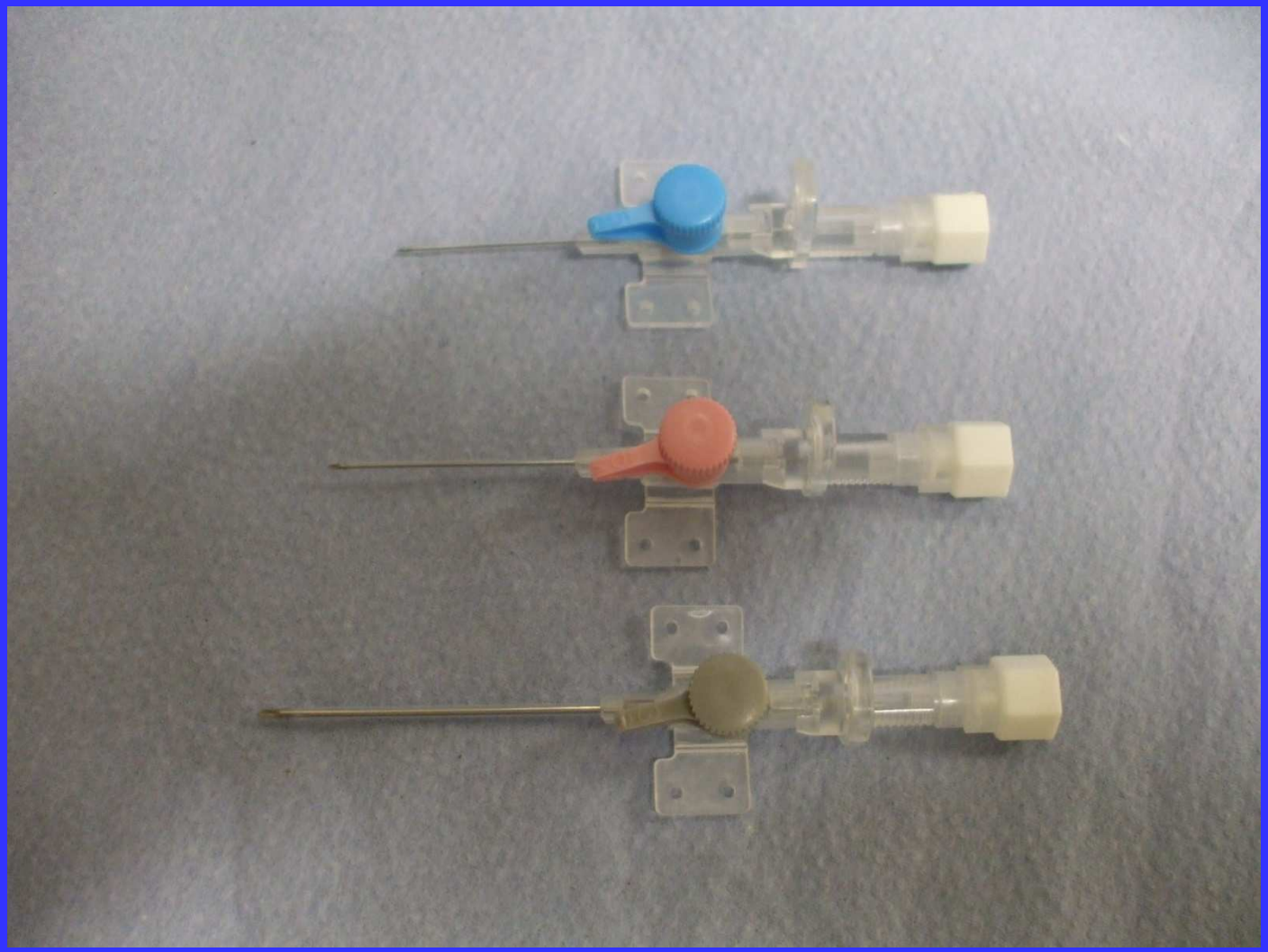
f)Patient on anticoagulant - high INR - need urgent correction (discuss lower limit in high risk patient, recurrent PE, MVR), offer prothrombin complex concentrate to patient on warfarin and high INR

g)Offer FFP for patients who are actively bleeding with PT and/or aPTT more than 1.5 normal, offer cryoprecipitate to patients with persistent fibrinogen level of less than 1.5g/l despite initial resuscitation

Is the patient shocked?

	Class I	Class II	Class III	Class IV
Vol loss (ml)	<750	750-1500	1500-2000	>2000
Vol loss (%)	0-15	15-30	30-40	>40
Systolic	Normal	Normal	Low	V Low
Diastolic	Normal	Raised	Low	V Low
Pulse	Slight tachy	100-120	120 thready	>120, v thready
Resp rate	Normal	Normal	>20	>20
Mental state	Alert	Anxious / aggressive	Drowsy	Confused / unconscious

What size cannula?



What size cannula?

Flow Rates through Cannulae (ml/min)		
Colour	**Gauge**	**Flow rate (ml/min)**
Pink	20	40
Green	18	75
Grey	16	150
Orange	14	300
Triple lumen CVP line	16	50

What fluid replacement?

- Blood if >30% volume loss
  - ?O-negative
  - ?Group specific
  - ?Cross-matched

Crystalloid or colloid?

- No comparative studies in UGIB
- Probably makes no difference

Inaproppriate use of blood

Appropriate blood product use

Table 4.27 Appropriate blood product use – reviewers' opinion

Appropriate blood product use	Number of patients	%
Yes	342	80.3
No	84	19.7
Subtotal	**426**	
Unknown	59	
Total	**485**	

Appropriate blood product use

Table 4.28 Improved management may have reduced the use of blood products – reviewers' opinion

Improved management may have reduced the use of blood products	Number of patients	%
Yes	113	24.7
No	344	75.3
Subtotal	**457**	
Unknown	28	
Total	**485**	

National Audit

- 2011 Red cell use in Medical Patients
  - 9216 cases in 181 hospitals/trusts
  - Medical use (only 1:3 haem audited)
  - 53% of transfusions fell outside of algorithm based on national appropriate use guidance
  - 1592 potentially avoidable transfusions audited in more depth
    - 43% ?reversible, 32% above guideline trigger, 18% over transfused

UK Comparative audit of Upper GI bleeding and Blood use

- Acute upper GI bleeding accounts for 13% of all blood use
- 38% in West Midlands transfused rbc
- 6750 cases analysed
- 13% of rbc transfusions deemed inappropriate
  - Hb>100g/l and stable
- 42% of platelets given were inappropriate
- 27% of FFP was given inappropriately
    - 57% with INR>1.5 not given FFP

Appropriate thresholds for transfusion in GI bleeding?

- **Transfusion Strategies for Acute Upper Gastrointestinal Bleeding**
  - NEJM, January 8, 2013
  - Liberal (Hb 90) v Restrictive (Hb 70)
  - Improved survival in restrictive group 95% v 91%
    - Less re-bleeds
    - Less adverse events
    - Lower portal-pressure gradient
  - THOUGH -higher mortality in restrictive group with
    - PUD
    - Childs-Pugh A or B

Serious Hazards of Transfusion

- 2012 data
  - Transfusion caused or contributed to death – **9**
  - Major morbidity definitely or probably related to transfusion – **134**
  - Minor or no morbidity as result of transfusion reaction – **1502**

Risk of death 3.1 per 1 000 000 components transfused
Risk of major morbidity 46.5 per 1 000 000

4 - Time to Endoscopy

- All patient with a GI bleed and haemodynamic instability should have 24/7 access to an **OGD within two hours of optimal resuscitation (NICE recomndation)**
- Endoscopy within 24 hours (ideally within 6-12 hours within working hours, if space and skilled endoscopist available - this potentially prevent further bleed and possibly blood transfusion).
- Patient with BRRB with shock index >1 - urgent OGD -

Who is at risk- assessment

- **In patient Vs acute admissions**
- **Increasing age**
- **Co-morbidity** – IHD, Renal/Liver/cancer
- **Shock** – BP < 100, HR > 100 (drugs)
- Drop in HB, Urea level
- Anti-PL, NSAIDs, warfarin
- **Endoscopic findings- spurter, vessel**

Endoscopy 24/7

Table 2.12 Endoscopy on-call rota 24/7 (hospitals to which patients with a GI bleed are admitted)

Endoscopy on-call rota 24/7	Number of hospitals	%
Yes	125	90.6
No	13	9.4
Total	**138**	

Table 2.13 Endoscopy service 24/7 (hospitals to which patients with a GI bleed are admitted)

Endoscopy service 24/7	Number of hospitals	%
Yes	125	67.6
No	60	32.4
Subtotal	**185**	
Not answered	1	
Total	**186**	

75- admission with fall –BP 90/70, P 93/AF, HB 11.3
Medical History – MVR- on Warfarin, H/O TIA, INR 9, Urea 10, HB 10

what would you do?

- Resuscitation – IV access- grey VFX2
- What Fluid- D/W, N/S, Colloid, Blood?
- What to Monitor (BP >100)
- Proton pump inhibitors?
- When to endoscope

Time to OGD

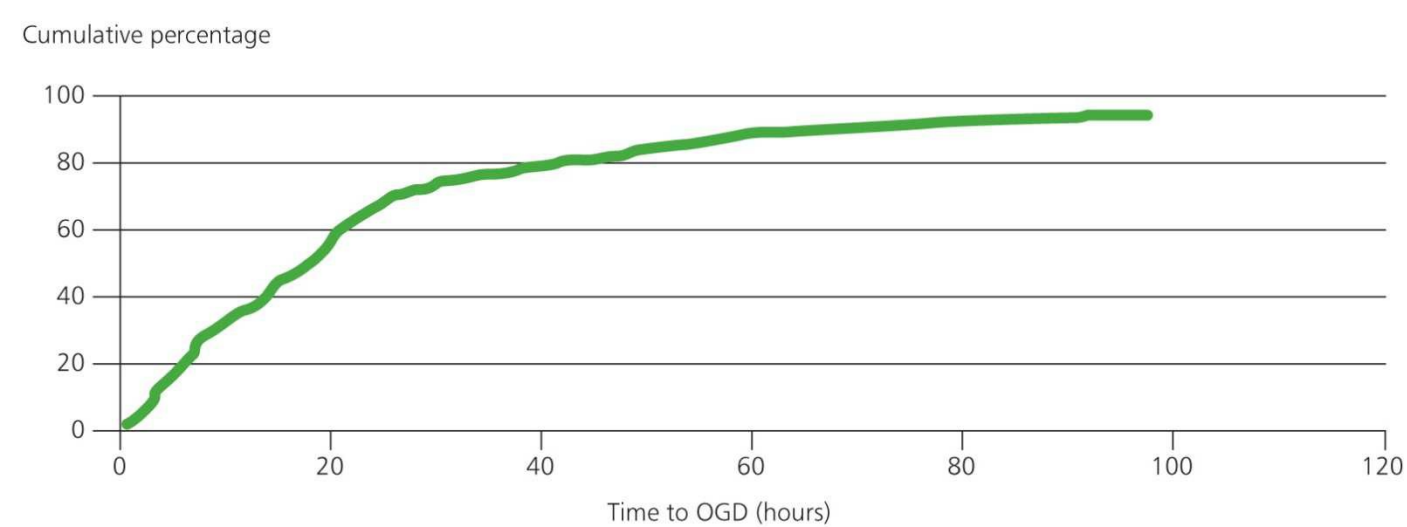


Figure 6.1 Time to OGD

- NICE QS 38 2013 suspected UGIB OGD < 24hours
- All patients = time of admission or presentation (IPs)
- 65% (205/316) < 24 hours

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Findings at OGD

Table 6.14 Findings at OGD

Findings at OGD	Number of patients	%
Non-variceal bleeding	213	46.1
Variceal bleeding	38	8.2
Upper GI bleeding but cause obscured by blood	25	5.4
No upper GI bleed found	186	40.3
Subtotal	**462**	
Not answered	28	
Total	**490**	

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Length of stay

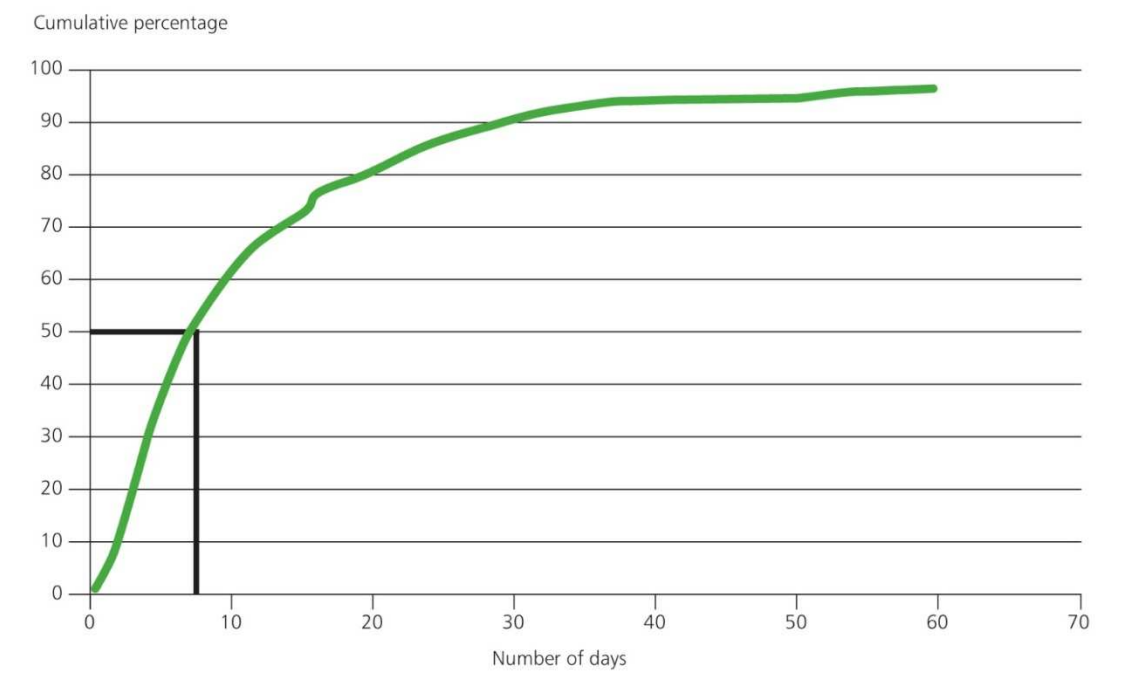

Figure 7.1 Length of stay - acute admission with GI bleeding

- Median 8 days
- 20% >18 days
- 10% 1 month +

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Mortality

Table 7.7 Mortality

	Died	Total number of patients	Mortality %
All patients	3,093	29,796	10.4
≥4 units	921	4,563	20.2
No blood	1,496	20,631	7.3

Table 7.8 Mortality by degree of sickness using shock index as a marker

Shock index	Alive	Deceased	Mortality %	Total
≤0.7	172	38	18.1	210
>0.7 ≤1	170	55	24.4	225
>1.0 ≤1.3	73	28	27.7	101
>1.3	36	15	29.4	51
Insufficient data	25	6	19.4	31
Total	**476**	**142**		**618**

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What is the management of high-risk lesions?
Actively bleeding
Non bleeding visible vessel
Adherant clot

Endoscopic haemostasis

- **injection therapy** (vasoconstrictors, sclerosants, tissue adhesives)
- **thermal therapy** (heater probe, bipolar, argon plasma coagulation)
- **mechanical therapy** (endoscopic clips, loops, suturing/stapling devices, OTSC)

Nanotherapy- Hemospray/ endoclot

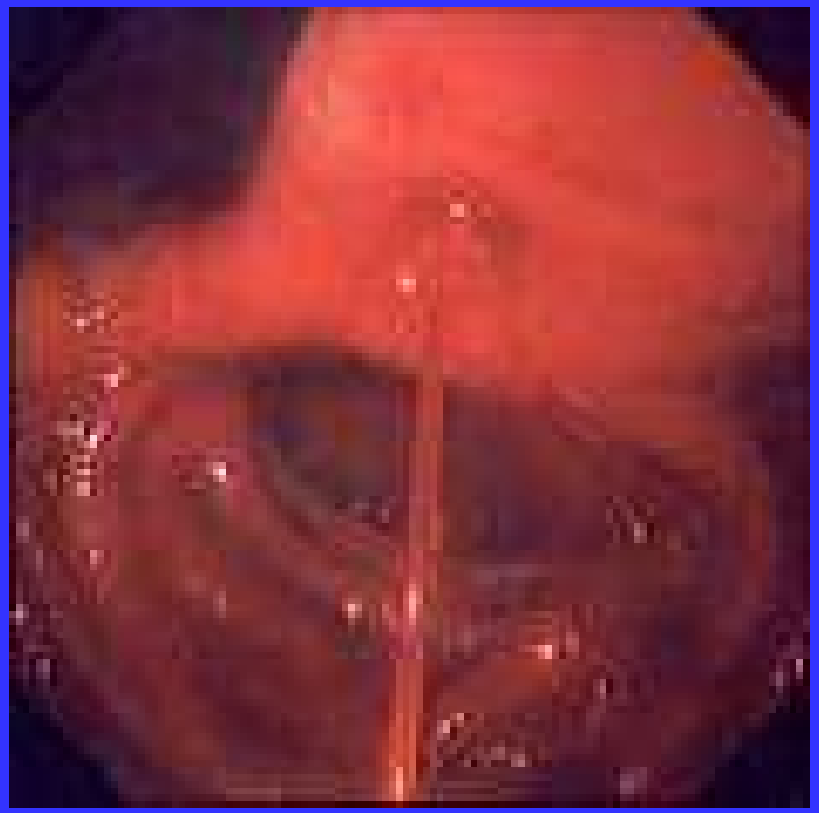
Endoscopic Risk Stratification

Endoscopic Finding	Rebleed	Mortality
Active Bleeding	**55%**	**11%**
Visible Vessel	**43%**	**11%**
Adherent Clot	**22%**	**7%**
Flat Spot	**10%**	**3%**
Clean Ulcer Base	**5%**	**2%**

Laine & Peterson NEJM 1994;331:717

Spurter

- Endoscopin treatment
- Clips
- Adrenaline
- MPEC (MTP)
- Heater probe (MP)
- ADr + C or H
- Bands



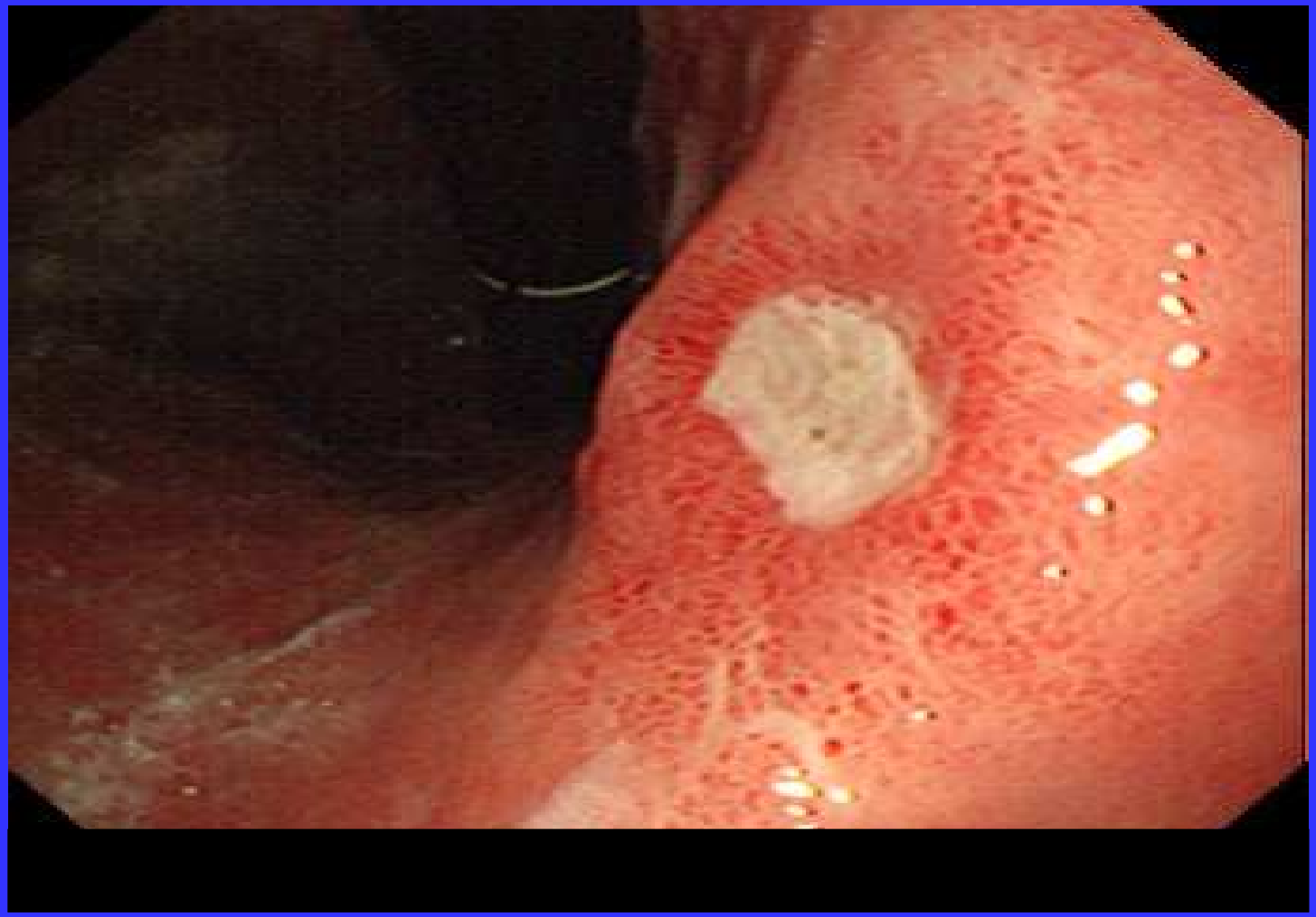
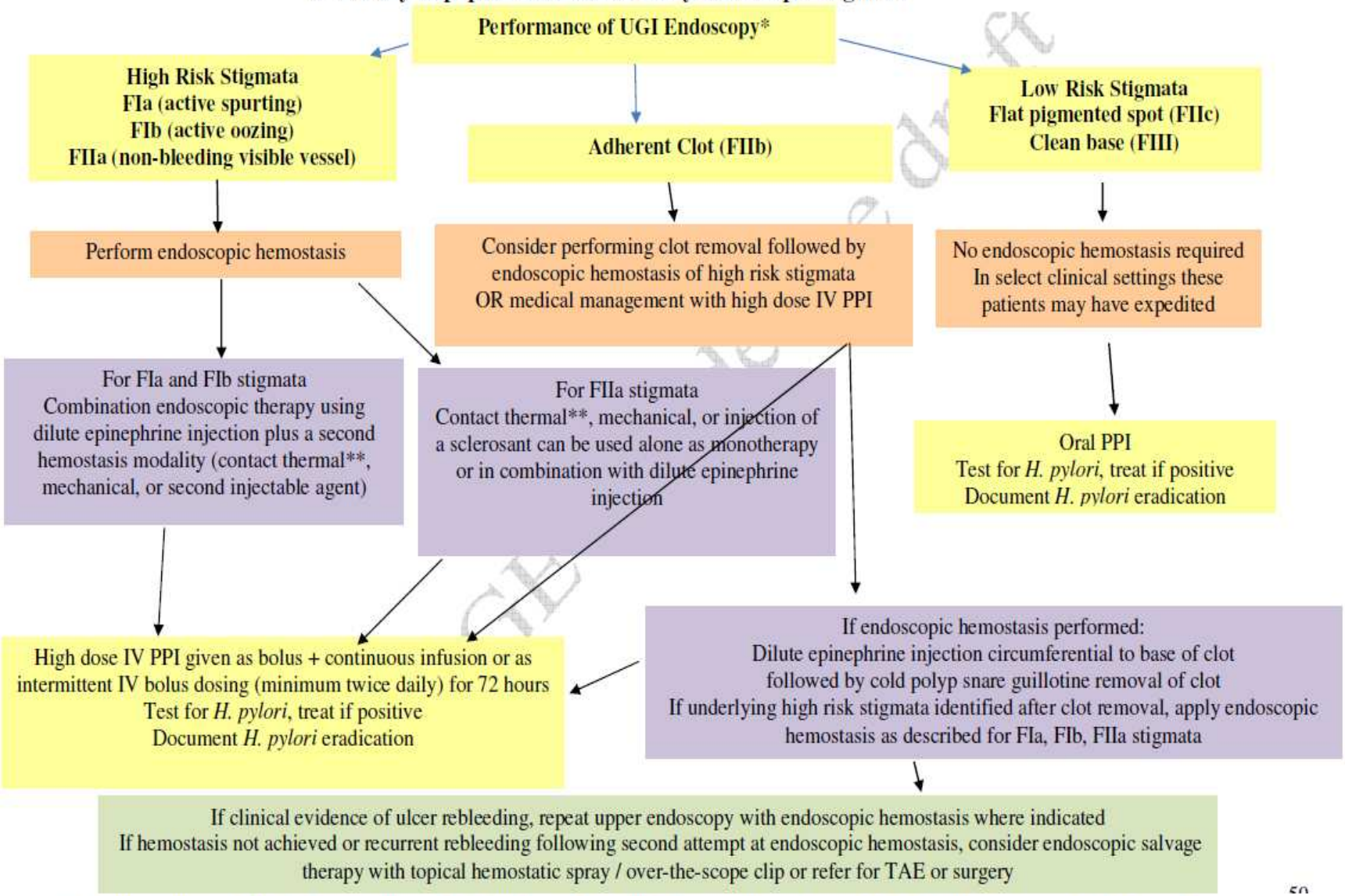


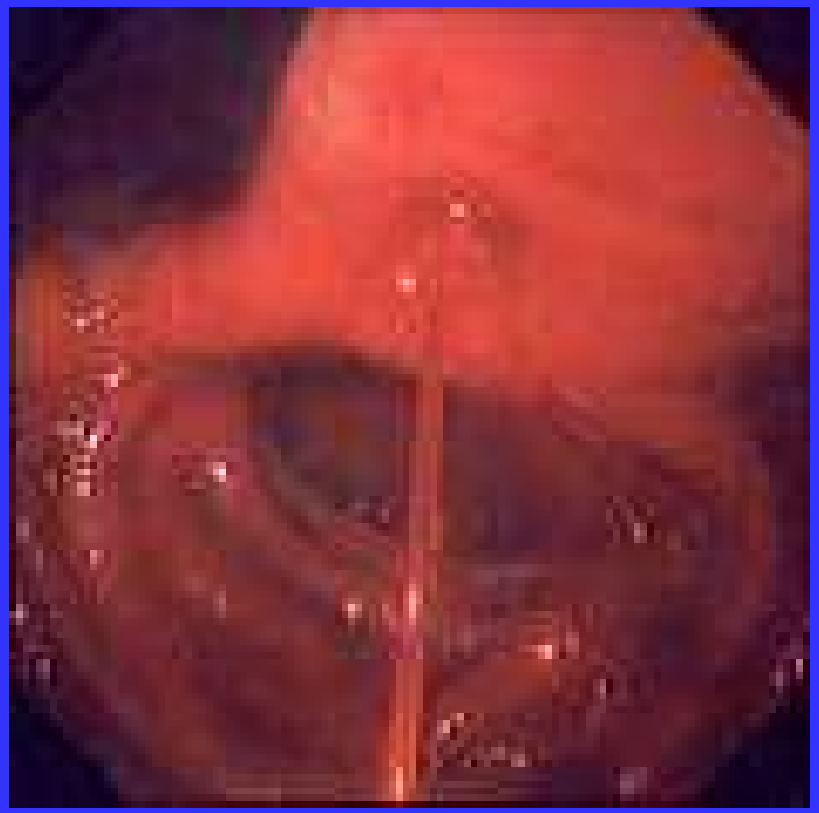
Figure 3. ESGE algorithm for the endoscopic management of patients with NVUGIH secondary to peptic ulcer stratified by endoscopic stigmata

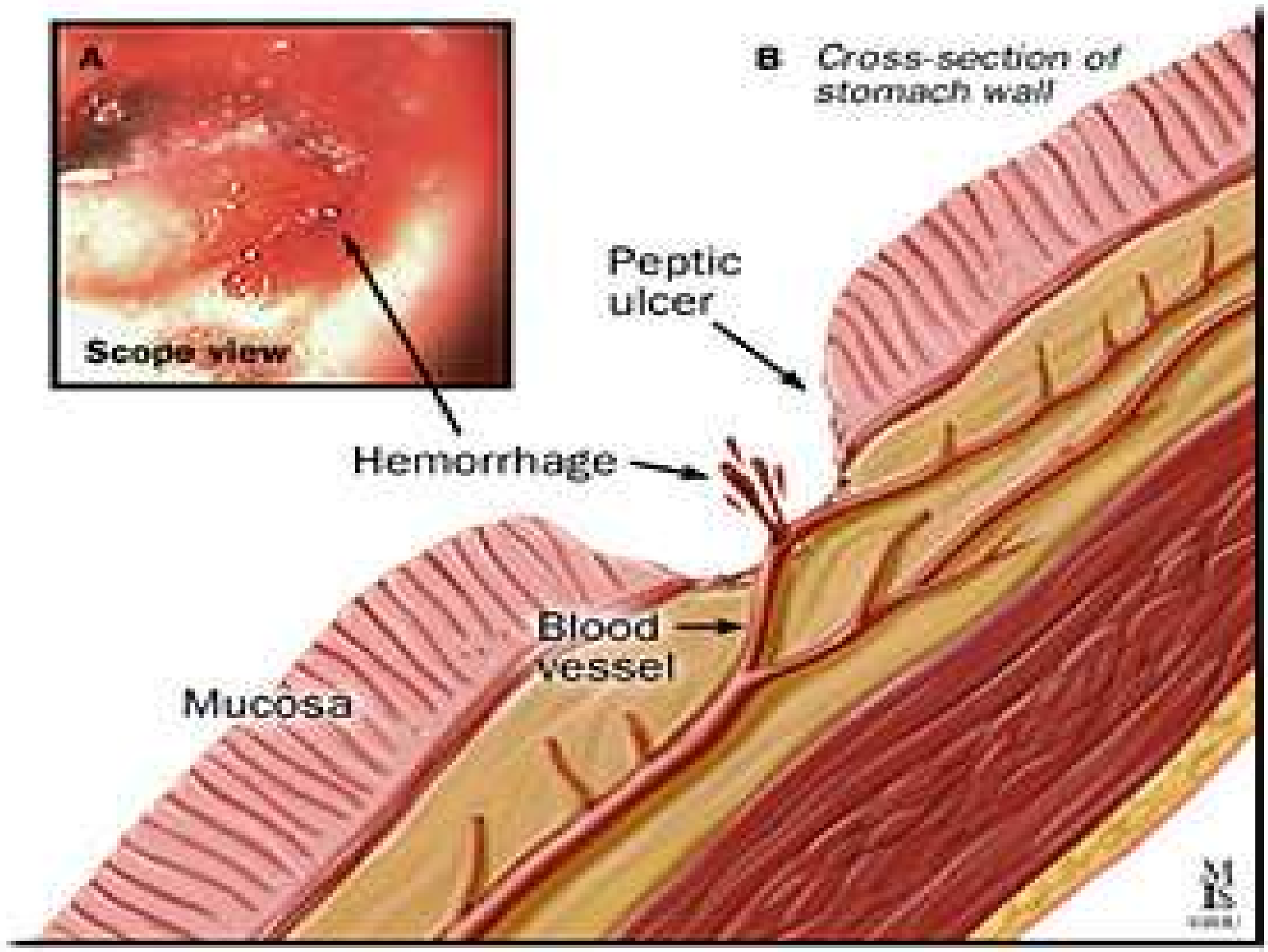


*Use of a large channel or double channel therapeutic UGI endoscope is recommended;**Large size 10Fr probe recommended; UGIH, upper gastrointestinal hemorrhage; PPI, proton pump inhibitor; F, Forrest; ASA, acetylsalicylic acid; DAPT, dual anti-platelet therapy; TAE, transcatheter angiographic embolization

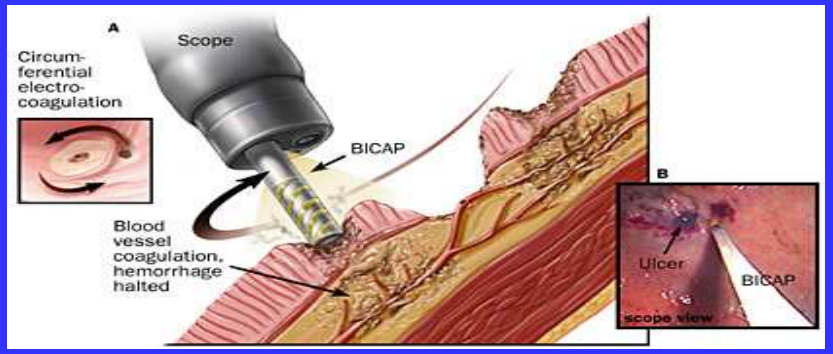
Spurter 11% mortality, 50 % rebleed, 10% death

- Endoscopin treatment
- Clips
- Adrenaline
- Heater probe (MP)
- ADr + C or H
- Bands




A
Scope view
B Cross-section of stomach wall
Peptic ulcer
Hemorrhage
Blood vessel
Mucosa

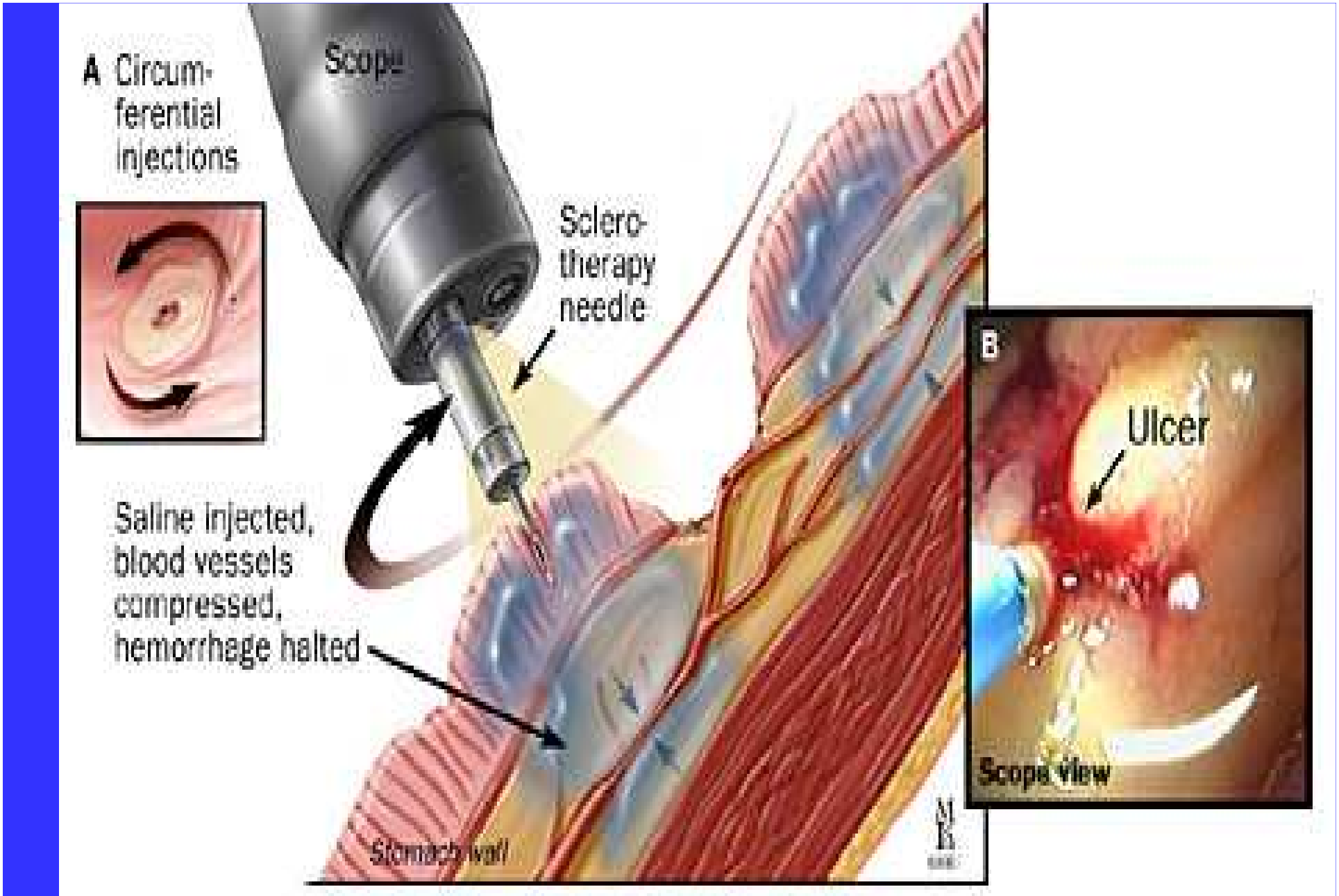
Thermal treatment



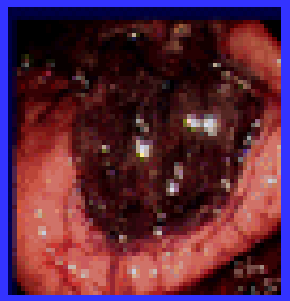
- Heater probe – MP
- Gold probe BP (depth is sallow and more predictable)
- Coupled with injection therapy
- Coaptive coagulation- firm pressure
- Until area black and cavitated (severl pulses)
- HP used to low power 15-30J (lower in Duo)
- Caution- cavitating lesion, repeat therapy, if plane parallel

Injection therapy

- Adrenaline 1:10,000 mono therapy ?
- Along with thermal, clips or thrombin
- RCT- >13ml adrenaline- avoid injecting the vessel, 4 quadrant around then into it. (direct injection into vessel- ↑HR, BP
- >40ml can lead to /Pain/perforation?
- Sclerosant effective- ↑ complication
  - » Lin et al GIE 2002
  - » Rollhauser et al Clin Gast 2001


A Circum-
ferential
injections
Scope
Sclero-
therapy
needle
Saline injected,
blood vessels
compressed,
hemorrhage halted
Stomach wall
B
Ulcer
Scope view

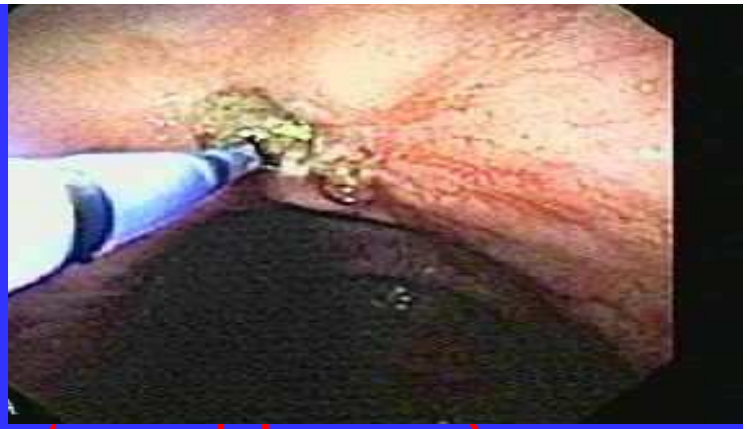
Adherent clot IIb



- 4 quadrant injection adrenaline
- Clot removal- flushing/displacing, snaring
- Once vessel exposed treat

» Jensen et al Gastroenterol 2002

APC

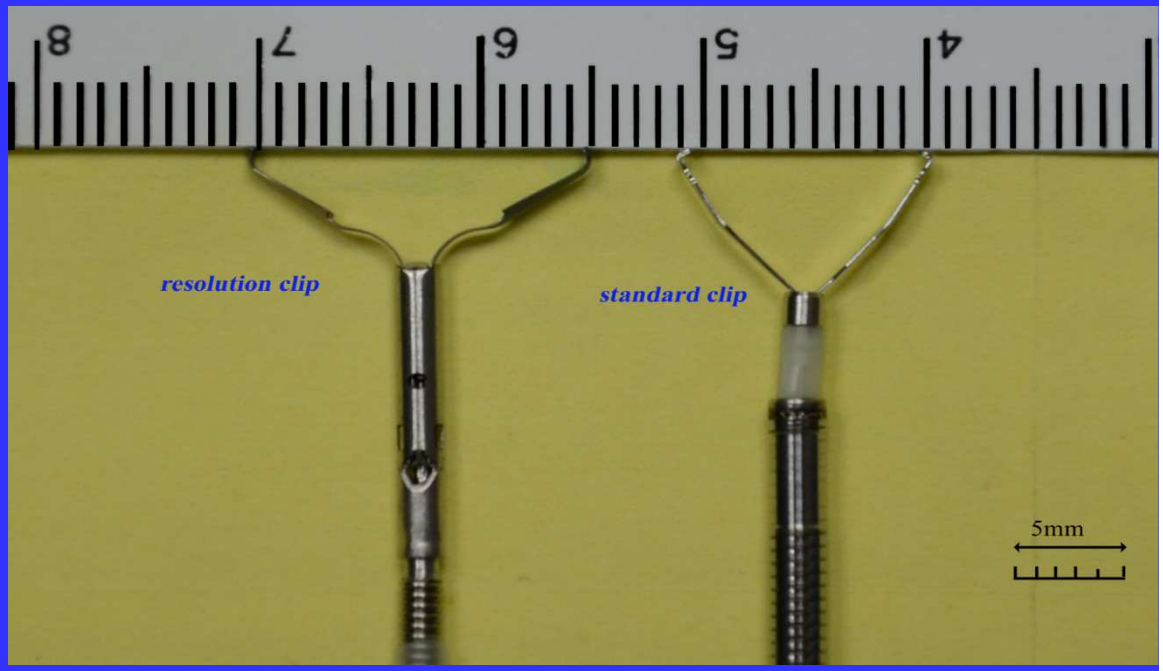


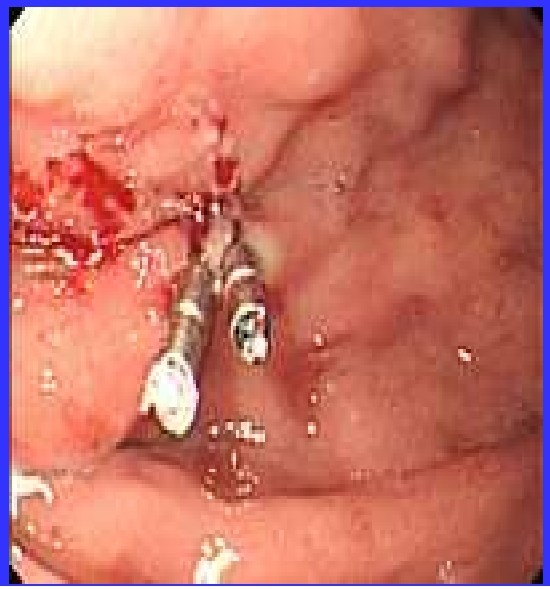
- No tissue contact needed (tangentianal lesion)
- Tissue coagulation –depth 2-3mm
- Not useful to treat spurter
- Good for oozing ulcer/ GAVE
- Safe in duodenum
- Unipolar- care if plantable defib/Pacemake

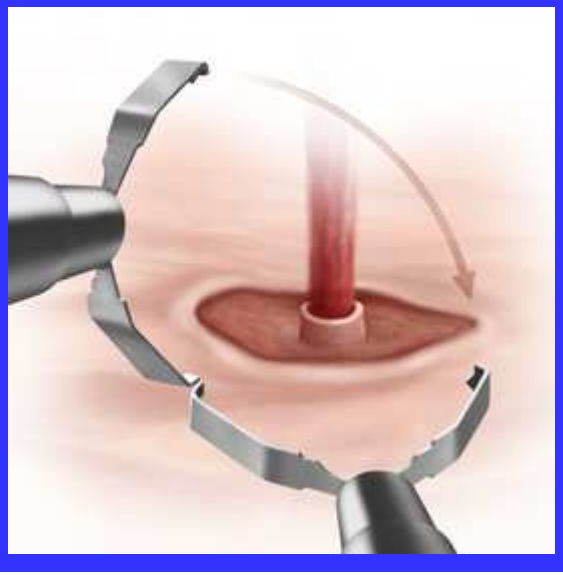
» Johannsw et Eur j Gastroenter Hepato 1997

» Peterson et GIE 2007

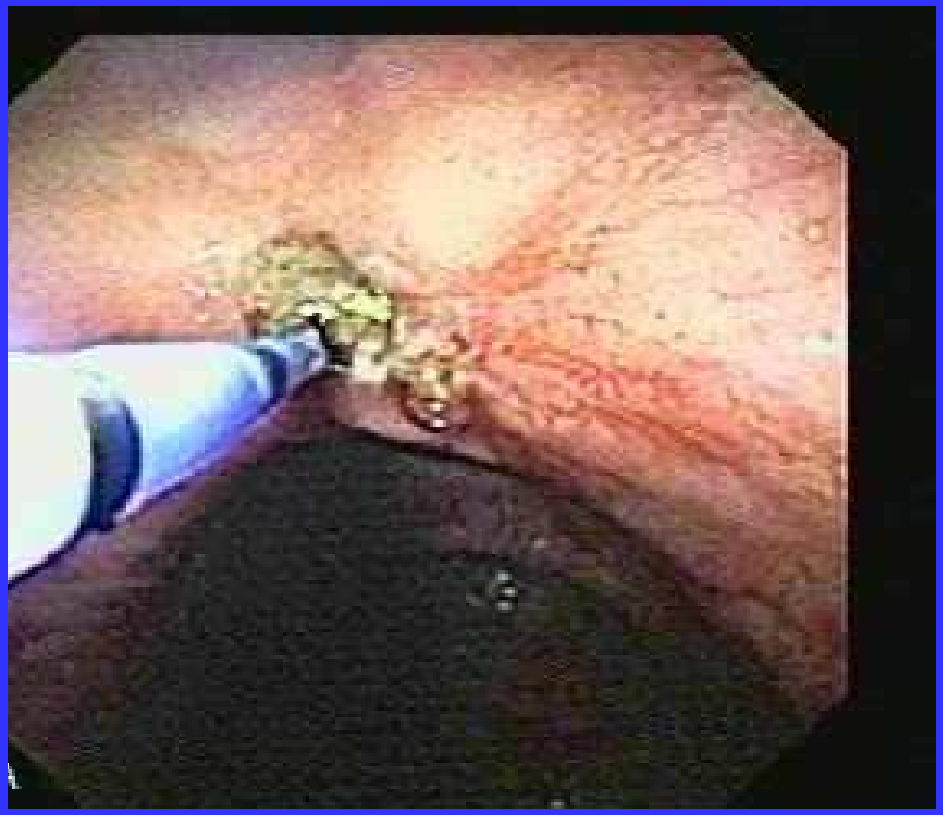
clips



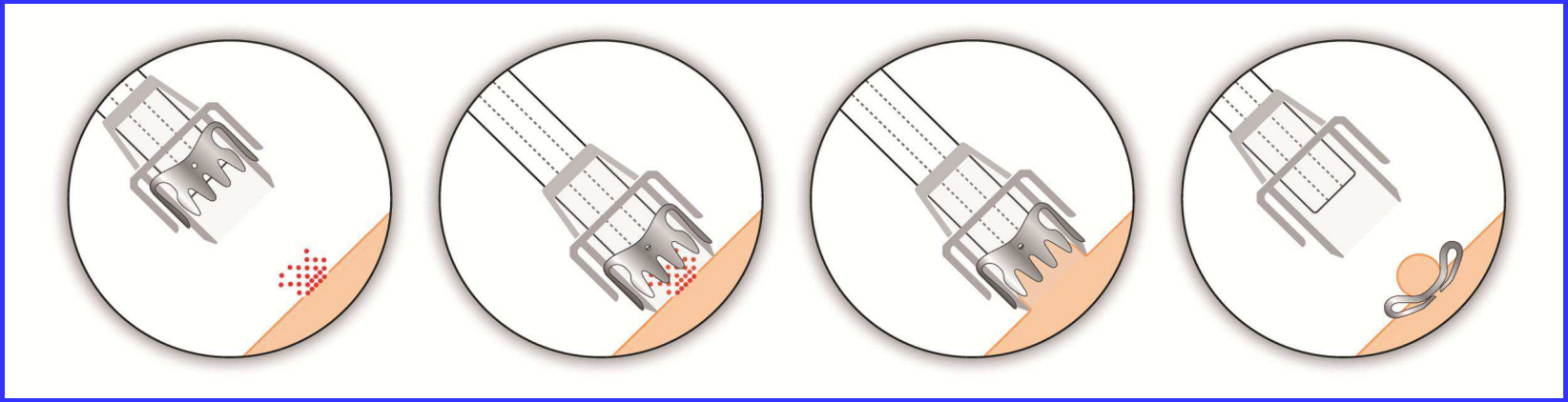




APC Courtesy Dr M SACA



Application technique for endoscopic hemostasis



Hemospray is licenced for :

a

UPPER GI non-VARACEAL BLEEDS

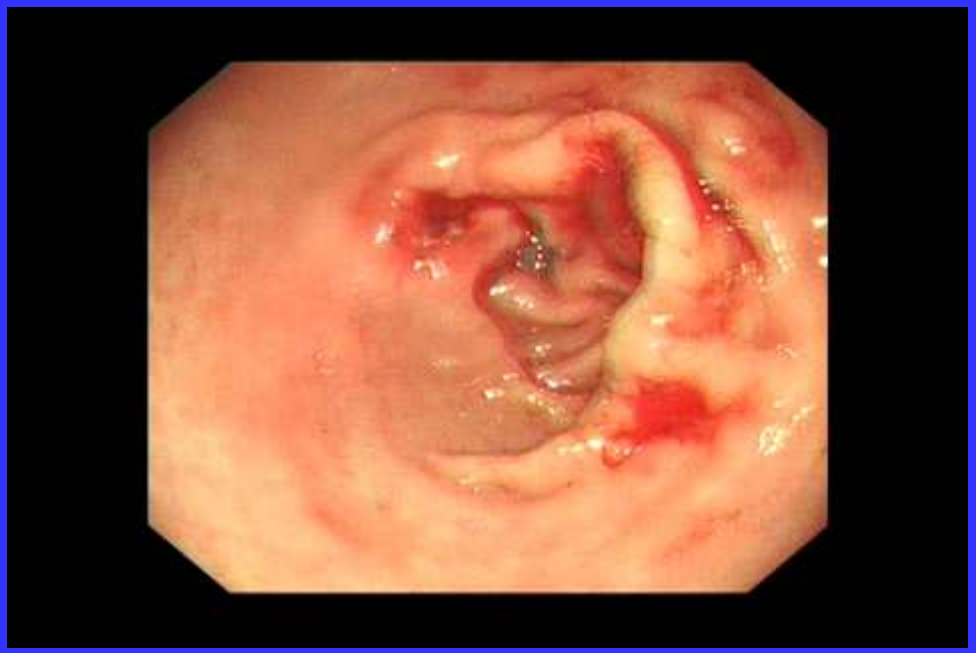
CONTRA INDICATIONS :

Perforations

Fistulae

Easy as 1 2 3

1. Activate CO_2
2. Open
3. Deploy



- **Hemospray use for the management of acute bleeding from upper gastrointestinal cancer: The Russells Hall Experience**
- **Disney BR, Kumar Kurup A, Ishaq S**
- **BSG 2015**

- Hemospray was found to be effective for malignancy related upper gastrointestinal bleeding and should be considered as a primary therapeutic modality in this setting. It may be used as a bridge to more definitive therapies such as radiotherapy or drug therapy (e.g. thalidomide, chemotherapy).

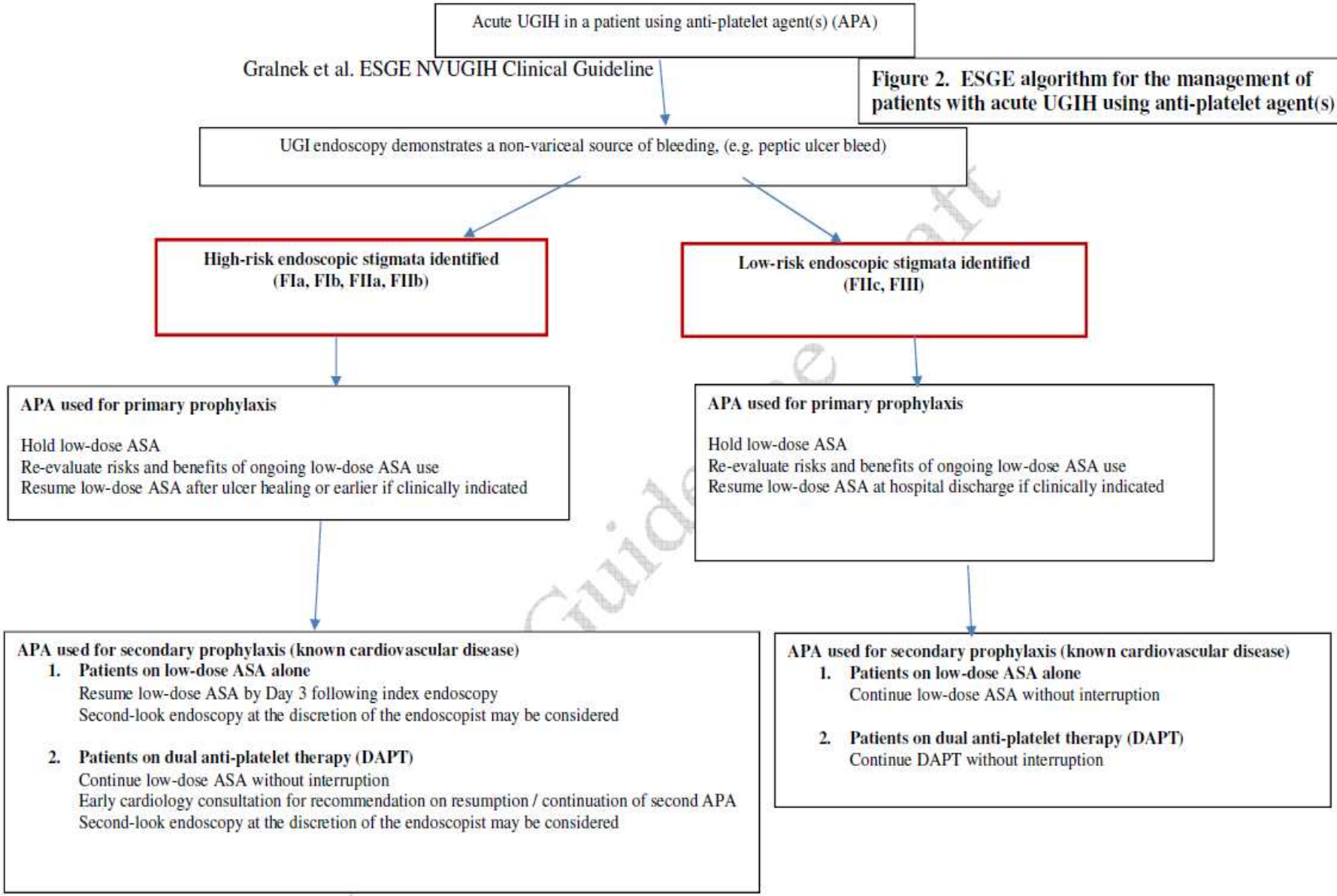


Figure 2. ESGE algorithm for the management of patients with acute UGIH using anti-platelet agent(s)

For patients using a non-ASA APA as monotherapy (e.g., thienopyridine alone), may substitute low-dose ASA for interval period in those patients without any contraindication or allergy to ASA. Early cardiology consultation should be obtained for further APA recommendations

ASA, acetylsalicylic acid; APA, anti-platelet agent, DAPT, dual anti-platelet agent

The risk of gastrointestinal bleeding with novel oral anticoagulants in a large cohort of patients at a district general hospital

Aditi Kumar[1], Benjamin R Disney[1], Rupert Hipkins[2], Sarah Hughes[2], Steven Jenkins[2], & Sauid Ishaq[1]
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BACKGROUND:

- Rivaroxaban, apixaban and dabigatran compile the novel oral anticoagulants (NOAC).
- NOACs are used as first line treatment for atrial fibrillation (AF), pulmonary embolism (PE) at Russells Hall Hospital (RHH) since 2012 and deep venous thrombosis (DVT) since 2013
- **Trial data regarding risk of gastrointestinal (GI) bleeding is conflicting**
- In the ROCKET-AF study, the rate of GI bleeding was significantly higher in the group randomised to receive rivaroxaban (3.2%) versus warfarin (2.2%), p < 0.0001)
- EINSTEIN-DVT and EINSTEIN-PE studies showed similar bleeding rates for rivaroxaban and warfarin although GI bleeding was not specifically addressed
- A meta-analysis of NOACs found an increased risk of GI bleeding with NOAC as opposed to warfarin (2.3% vs 1.3%, p = 0.036)
- Although trials have shown increased risk of GI bleeding with

METHODS:

- A retrospective review was performed of all patients at RHH who received NOACs
- These patients were identified from the anticoagulation database and cross referenced with the GI endoscopy database and patient notes.
- Basic demographic, clinical and laboratory data and endoscopic findings were collated.

STRENGTHS

- Largest cohort worldwide
- Single center experience

LIMITATIONS:

- Due to the small sample size of patients on apixaban and dabigatran, difficult to compare with the trial data as well as between the NOACs
- Severity of upper GI bleed using the Rockall score or Blatchford score was not performed
- A multivariate analysis needs to be performed with patients on warfarin over the same time period at RHH to ensure there are no confounding variables.
  - Alcohol, concomitant medications, symptoms, comorbidities

CONCLUSIONS

- Prevalence of bleed more common >75 yrs of age
- Whilst there appeared to be a higher incidence of GI bleeding as compared to that observed in RCTs thus far,
  - There were no deaths directly as a result of the GI bleed
  - Only 11.5% required endoscopic intervention
  - The use of blood products was relatively low at 34.4%
- Further studies need to be performed to provide a more accurate analysis for apixaban and dabigatran

REFERENCES

1. Patel MR et al. Rivaroxaban versus warfarin in nonvalvular atrial fibrillation. N Eng J Med. 2011. 365(10): 883-91.
2. Buller HR et al. Oral rivaroxaban for the treatment of symptomatic pulmonary embolism. N Eng J Med. 2012. 366(14): 1287-97
3. Bauesachs R et al. Oral rivaroxaban for symptomatic venous thromboembolism. N Eng J Med. 2010. 363(26): 2499-510
4. Capodanno et al. Novel oral anticoagulants versus warfarin in non-valvular atrial fibrillation: a meta-analysis of 50 578 patients. Int J Cardiol. 2013. 167(4): 1237-41.

RESULTS

Table 1: Comparison between the NOACs

	Non-bleeders (n= 2487)	Bleeders (n= 61)	
Mean age (yrs)	74 +/- 15	80 +/- 8	P < 0.001
Gender	Females 1175 (47.2%) Males 1312 (52.8%)	Females 41 (67.2%) Males 20 (32.8%)	
NOAC therapy	Rivaroxaban 2332 (93.8%) Apixaban 77 (3.1%) Dabigatran 77 (3.1%)	Rivaroxaban 54 (88.5%) Apixaban 4 (6.6%) Dabigatran 3 (4.9%)	

*2.45% bleeds in total at time of study. Since then, increased to 2.57%

Table 2: Bloods on admission

INR	Percentage
INR > 1.5	26.2%
INR > 2	14.7%
Hb < 10	49.2%
Hb < 7	16.7%

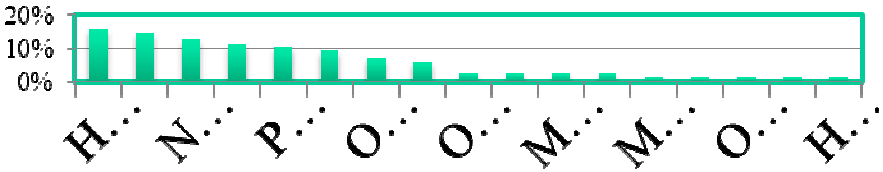
- pRBCs required in 34.4%
- Median units needed: 4 IQR 2, range 1-8
- There was no correlation between INR and blood transfusion requirement

Table 3: Endoscopy findings upper GI vs lower GI bleeds

Normal (6)	Diverticular disease (16)
Peptic ulcer disease (6)	Haemorrhoids (12)
Gastritis (6)	Polyps (colonic/rectal) (7)
Oesophagitis (5)	Normal (5)
*30/61 (49.2%) 16/30 (53%) required blood transfusion	*31/61 (51.8%) 5/31 (16%) required blood transfusion

Some patients had multiple findings on endoscopy whereas others had more than one investigation.
*UGIB is defined as patients who presented with either fresh haematemesis, melaena and/or coffee ground vomiting
**LGIB is defined as patients who presented with fresh PR bleeding

Graph 1: Endoscopic findings of all patients on NOACs



- 26.2% patients with endoscopic findings compatible with active/recent bleeding
- 11.5% patients had active bleeding at time of endoscopy, all treated successfully

ALL PATIENTS ON NOACs:

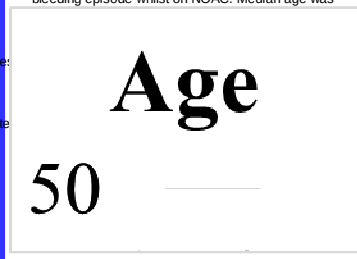
- The most common type of bleed presentation was PR bleeding (48%) followed by melaena (37%),haematemesis (10.9%) and coffee ground vomit (1.6%)
- The median time in days from when patients were started on NOAC therapy to the date of their endoscopy was 204 days (6.7 months) with a range of 2 days to 19.7 months

Table 4: Risk of bleeding between NOACs

Risk of Bleeding	Clinical significance
Dabigatran vs Apixaban	NS (p = 0.71)
Apixaban vs Rivaroxaban	NS (p = 0.43)
Dabigatran vs Rivaroxaban	(5% vs 2%, p = 0.11)

*Fisher's test

Graph 2: Age range of all patients that had a bleeding episode whilst on NOAC. Median age was



MORTALITY

30 day mortality rate was 10.9% (n=11)

No deaths due to severe GI haemorrhage

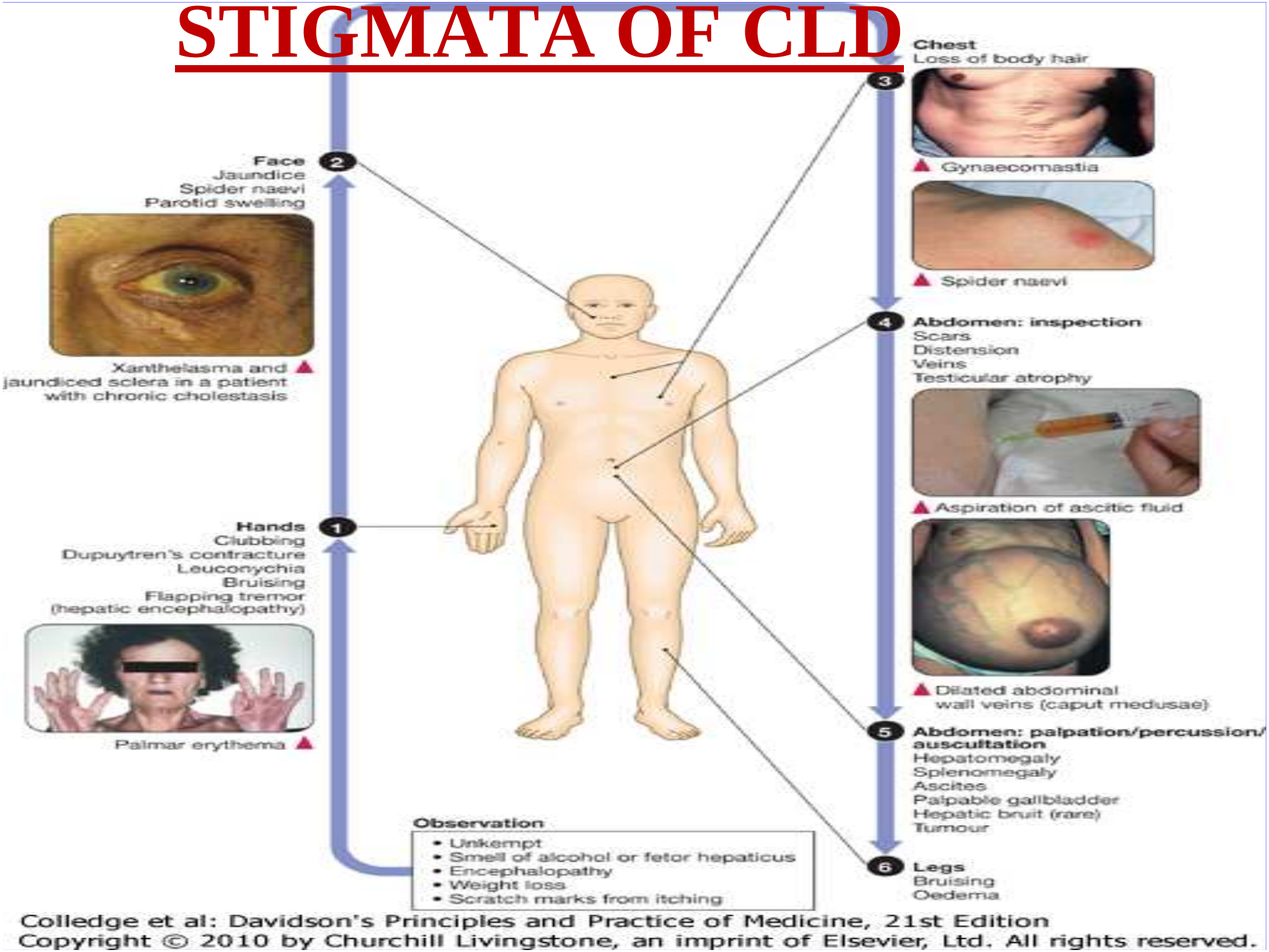
Causes of death:

Cancer
Sepsis
Unknown
Pneumonia

When to suspect Variceal bleed

- Melaena / haematemesis
- Jaundice
- Ascites
- Splenomegaly
- Spider naevi
- Alcohol misuse
- ↑INR,Bil ,↓PL

STIGMATA OF CLD



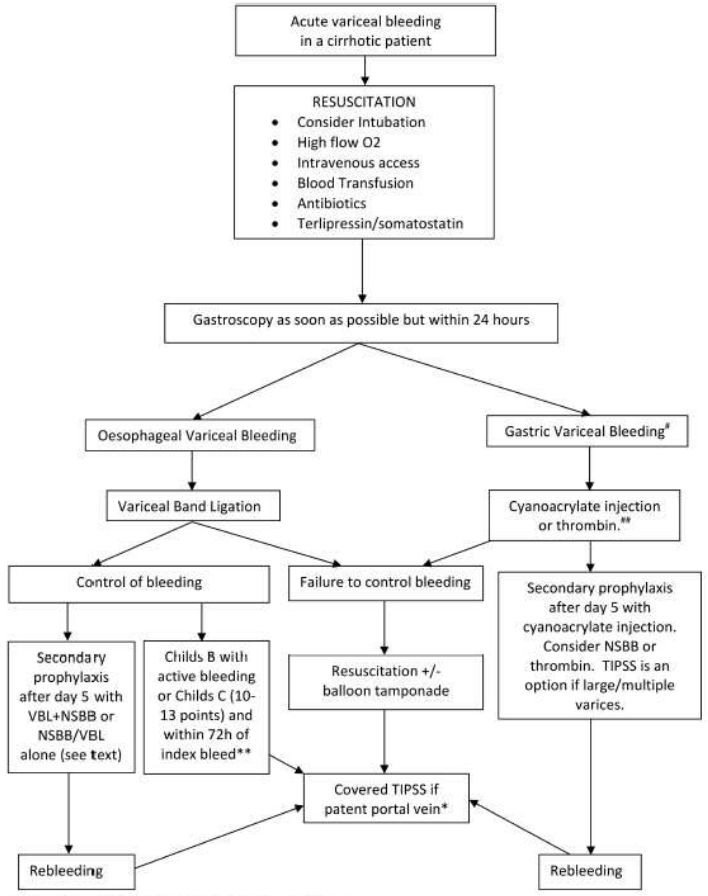
Colledge et al: Davidson's Principles and Practice of Medicine, 21st Edition

Table 2 Scoring systems for quantifying the severity of cirrhosis
Severity of liver disease can be described using the Child–Pugh score or MELD score.
The Child–Pugh score is the sum of severity scores for Child class, variceal size and red wale markings the variables shown below.

Category	1	2	3
Encephalopathy	0	I/II	III/IV
Ascites	Absent	Mild-moderate	Severe
Bilirubin (μmol/L)	<34	34–51	>51
Albumin (g/L)	>35	28–35	<28
INR	<1.3	1.3–1.5	>1.5

Child–Pugh class A represents a score of ≤6, class B a score of 7–9, and class C, ≥10.
The MELD score is a formula that includes three laboratory-based variables reflecting the severity of liver disease. It was originally used to predict the short-term mortality after placement of a transjugular intrahepatic portosystemic stent-shunt for variceal bleeding. Subsequently, it has been used in selecting candidates for liver transplantation.
MELD score: please use the online calculator https://www.esot.org/Elita/meldCalculator.aspx.
INR, international normalised ratio.

Figure 3 Algorithm for the management of acute variceal bleeding. TIPSS, transjugular intrahepatic portosystemic stent shunt.



** - depending on local resources or consider referral to specialist centre.
* - consider shunt surgery in well compensated patients or if TIPSS not feasible. In segmental portal hypertension consider splenectomy or splenic artery embolization
# - GOV-2 and IGV. GOV-1 to be treated as oesophageal varices.
- TIPSS can be considered depending on local resources and clinical judgement.
VBL – variceal band ligation. NSBB – non selective beta-blockers.
GOV-1 – gastro-oesophageal varices type 1. GOV-2 - gastro-oesophageal varices type 2.
IGV – isolated gastric varices.

Variceal bleed- how resuscitation is different

- Do not over-transfuse- rebleeding risk
- No Saline if ascites
- Dextrose/colloid, packed cell, PCC (Octaplex 1ml/kg)
  - (Liver failure/thrombombotic tendencies –avoid)
- BP > 90 mmHg, Hb > 8gm/dl
- Terlipressin 1-2mg QDS- for 5 days
- IV antibiotics- Tazocin
- Early endoscopy/Sengstaken tube)

Oesophageal Variceal Bleeding - Specific Measures

- **Endoscopic**

  Injection sclerotherapy
  Band ligation

- **Pharmacological**

  Vasopressin analogues
  Somatostatin
  Somatostatin analogues

- **Rescue Measures**

  Tamponade
  TIPSS
  Surgery

Oesophageal Variceal Bleeding – Antibiotics

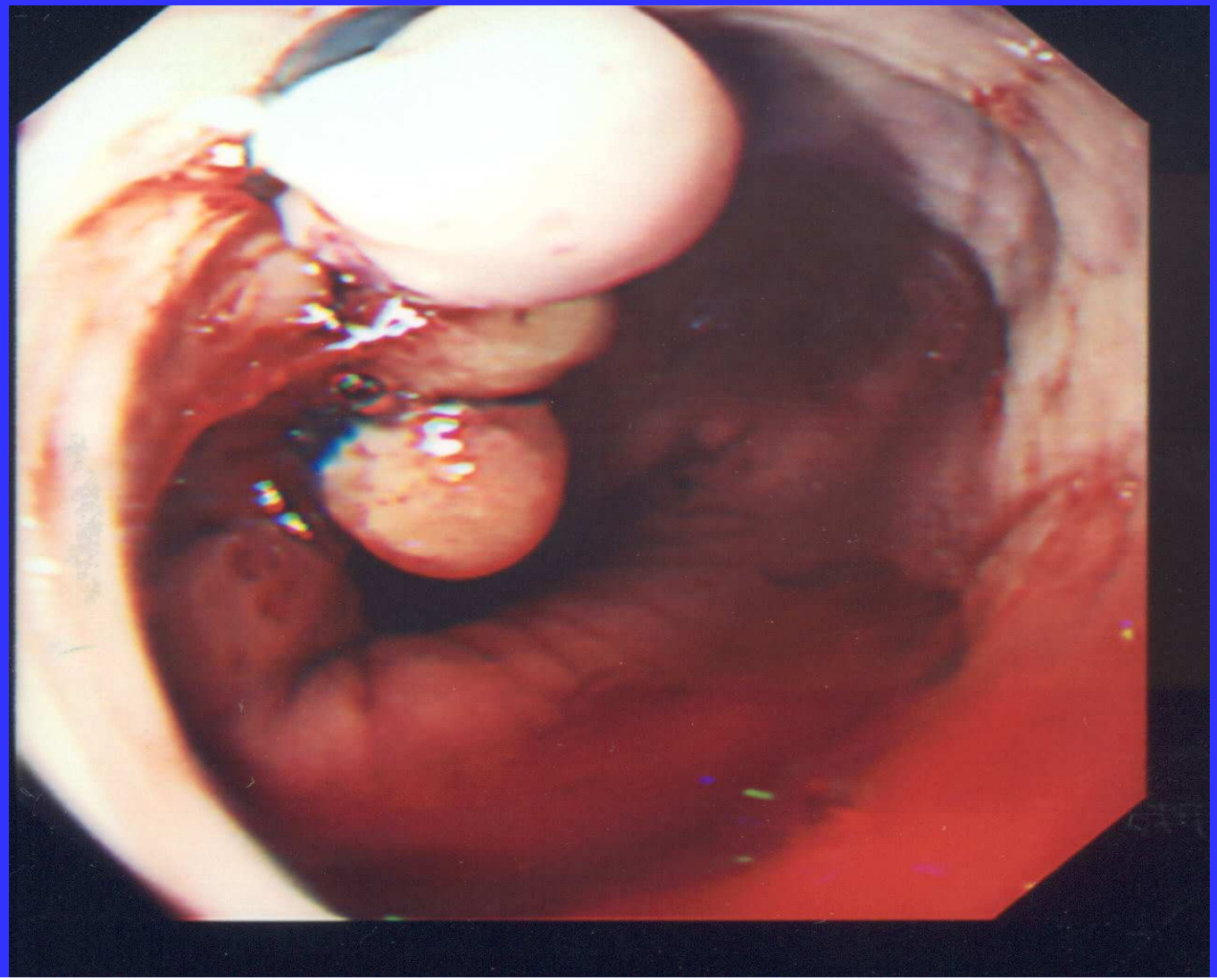
Bernard et at 1995

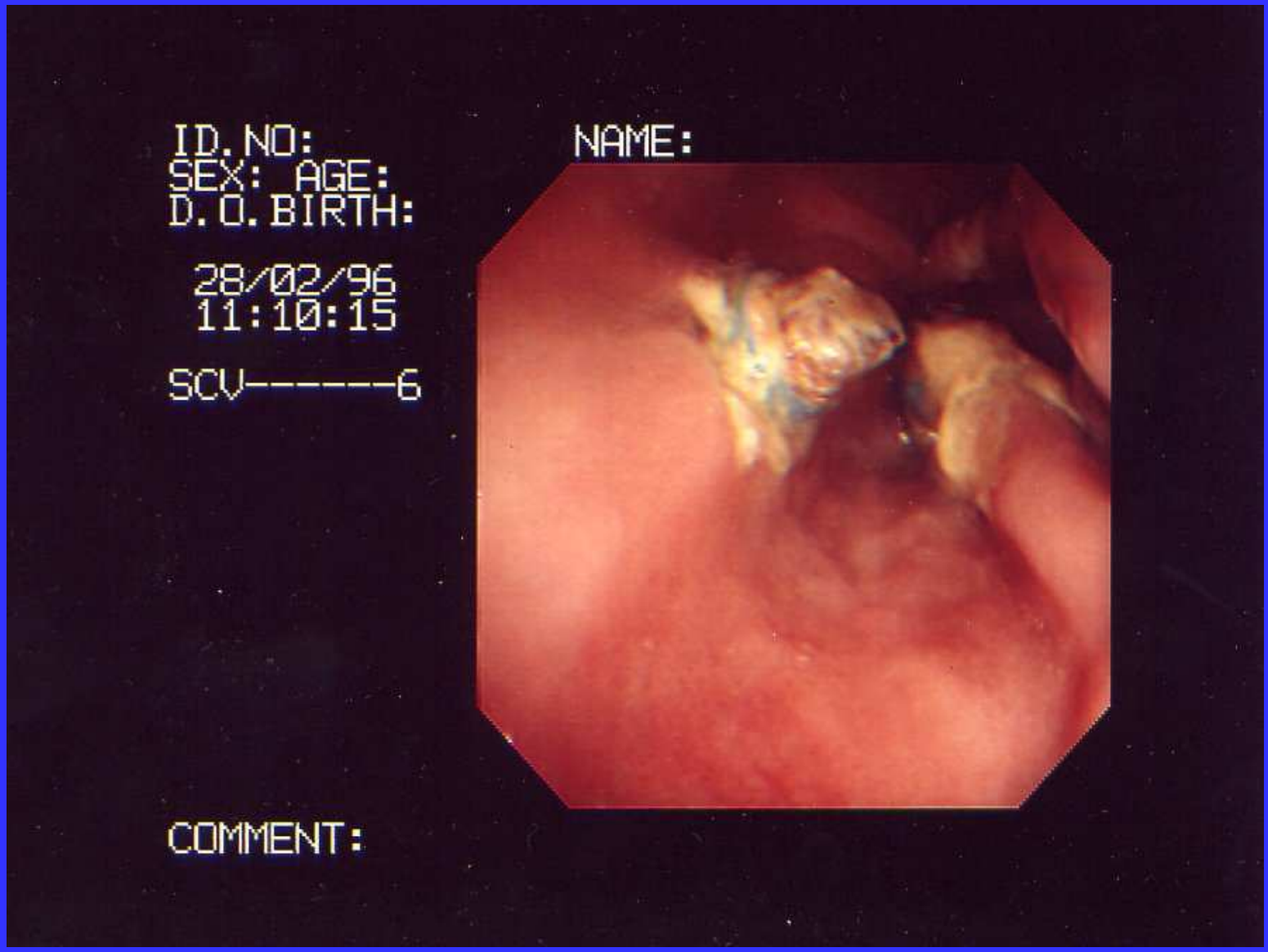
- 64 cirrhotics with bleeding
- 42 infections in 23 patients (36%)
- In infected patients
  - Higher mean Child-Pugh score
  - High mean transfusion requirement
  - More frequent rebleeding (43 v 10%)
  - Higher 30 day mortality (48 v 15%)

Bernard et al 1996

- Meta analysis of 414 patients receiving prophylactic antibiotics
- Reduced incidence of bacterial infections
- Increase in short term survival
- Prophylactic antibiotics should be given to patients with variceal bleeding

Banding

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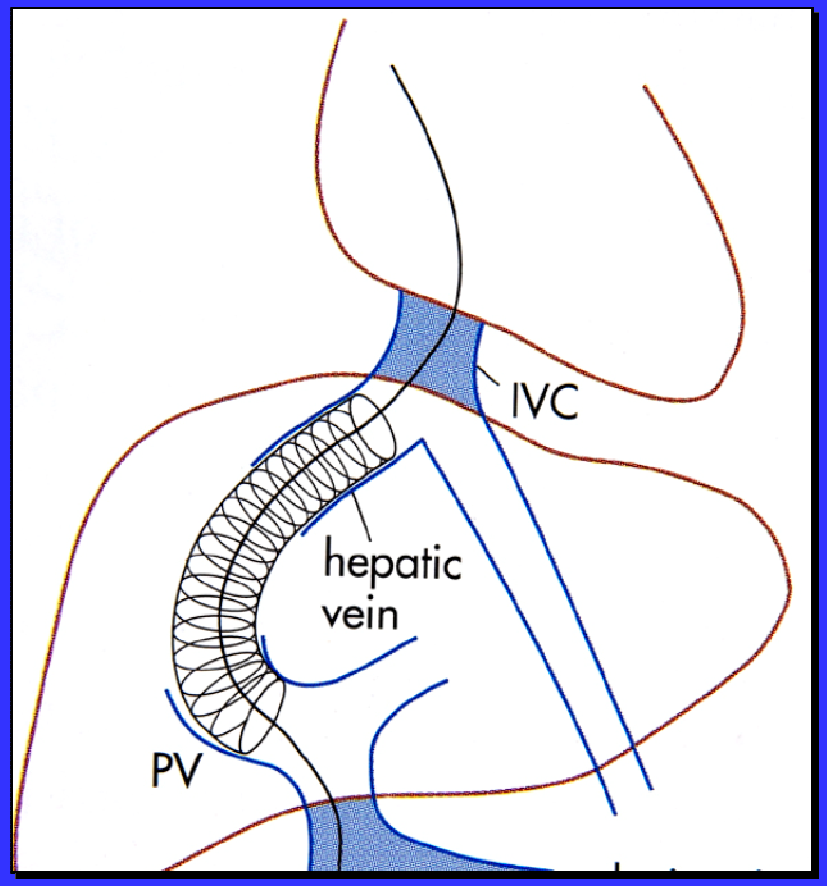

- 115 patients
- 61% Childs grade C
- Technical success rate 94%
- 30 day mortality 30%
- Rebleeding in 33%, usually due to shunt insufficiency
- 1 yr survival 52%

Saravanan R, 2005

Acute GI Bleed Protocol

Calculate their Rockall Score from inital vital signs (not compensated ones)?

Rockall	Risk Score	Score		Score		Score
Age	Below 60 yrs	0	60-79 yrs	1	Over 80 yrs	2
Shock	SBP>100 & HR <100	0	SBP>100 & HR>100	1	SBP<100	2
Co-Morbid	Nil Significant	0	Heart Disease or other co-morbidities	1	Renal, Liver or disseminated cancer	2
					Total Score	

Suspect variceal bleed if Jaundice or Ascites PMH of alcobol abuse

2 Green or Grey cannulas
Urgent Bloods - FBC/INR/U&Es/LFT
X-Match for 2-4u
Keep all pts NBM

Likely Variceal
Rockall over 2
Mortality Risk 50%

Aim for SBP 90-100

Volplex, Red Blood Cells (HB?)
Avoid overfilling

Terlipressin 2mg bolus then 1mg QDS for 72 hrs
+
IV/oral Ciprofloxacin

Is pt on warfarin

YES

IsVit K, FFP or Octaplex needed to correct clotting?

NO

High Risk Non Variceal
Rockall over 2

Aim for SBP above 100

Saline, Volplex, Red Blood Cells (check HB)

iv PPI not indicated until after endoscopy

Low Risk Non-Variceal
Rockall 1or 2

Group & Save only

Monitor BP, pulse, O_2 sats at least hourly

Next OGD available list

Consider home post OGD

Monitor BP, pulse, O_2 sats & urine output at least hourly intially

Urgent SpR review SpR to d/w on-call endoscopist or Surgeon. GI consultant will visit EAU at 9am weekends.

Check for next reserved OGD slot or ask to create extra slot if none available. Speak to GI Unit & then order it on Soarian

0-2	<5.6%
3	11.0%
4	24.6%
5	39.6%
6	48.9%
7	50.0%

Mortality Rates (based on Pre-OGD RS scores)

General Management Points

Stop diuretics, NSAIDs, antiplatelets, anticoagulants (except if used for mech. valve or PEs- contavt endoscopist urgently)
Eradicate H Pylori if DU or GU (& arrange Urease breath test). PPI in other cases.

Created by GI Bleed Champions

Summary

- Resuscitate adequately
- Risk assessment- Rockall, GBS
- Early GI team ownership
- If suspect varices –terlipressin/Abx/ early endoscopy
- If non variceal- with 24 hour (early in shock)
- Intravenous PPI infusion if peptic ulcer bleed with stigmata of haemorrhage
- Restrictive blood transfusion
- Monitor for rebleeding
- Joint management- bleeding uit