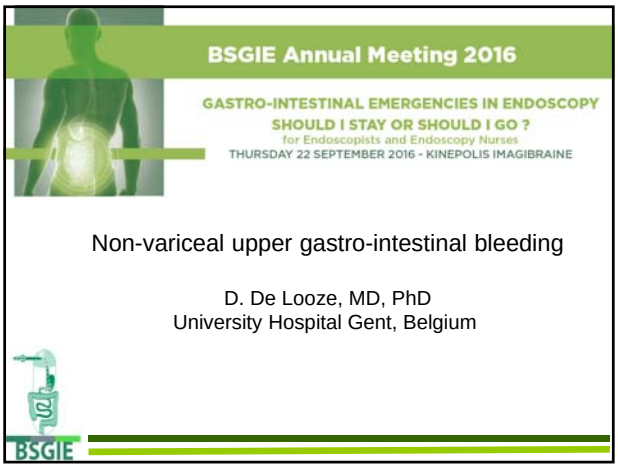


Non-variceal upper gastro-intestinal bleeding

D. De Looze, MD, PhD
University Hospital Gent, Belgium

Variceal and non-variceal upper GI bleeding still is a lethal disease

Mortality rates for upper GI bleeding in Europe

N=6750

New patients 7%
Inpatients 26%

Mean 10% (UK 1993 14%)

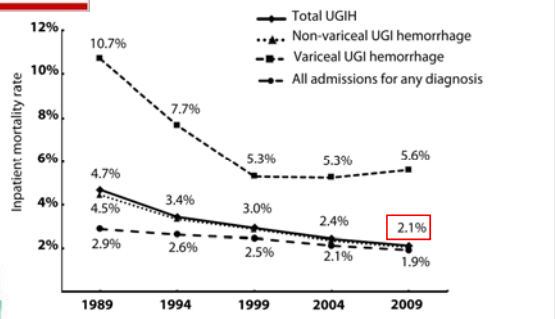
Gut 2011;60:1327-1335
Data from 2007

N=3203

New patients 8,3%

Endoscopy 2012;44:998-1008
Data from 2005-2006

In-hospital mortality decreased from 1989 to 2009 in the USA
New GI bleeding patients



GIE 2015;81(4):882-888e1

In-hospital mortality decreased from 1989 to 2009 in the USA
New GI bleeding patients

	1989	2009
In hospital endoscopy	70%	85%
Endotherapy		
Nonvariceal	10%	22%
Variceal	3%	66%
Endoscopy < 24 h	36%	70%

GIE 2015;81(4):882-888e1

55-year old woman - saturday 11.30 PM
Presents at the emergency department with hematemesis
No other medical conditions – no risk factors for liver disease
Medication: aspirin (Asaflow 80 mg daily) since 6 months (primary prevention – read it in a magazine)

Blood pressure 94/60 mm Hg
Heart rate 108 beats/minute

Lab results: hemoglobin 11,0 g/dl
platelets 220.000/ul – INR 1.0
blood urea nitrogen 40 mg/dl

BLOOD UREA (mg/dL)	SCORE VALUE
39-48	2
49-60	3
61-150	4
> 150	6
HEMOGLOBIN FOR MEN (g/dL)	
12-12,9	1
10-11,9	3
< 10	6
HEMOGLOBIN FOR WOMEN (g/dL)	
10-11,9	1
< 10	6
SYSTOLIC BLOOD PRESSURE (mmHg)	
100-109	1
90-99	2
< 90	3
OTHER MARKERS	
Pulse ≥ 100/min	1
Melena	1
Syncope	2
Hepatic disease	2
Cardiac failure	2
TOTAL score	5

GASTRO-INTESTINAL EMERGENCIES IN ENDOSCOPY SHOULD I STAY OR SHOULD I GO ?

for Endoscopists and Endoscopy Nurses

Intravenous fluid, PPI and….

1. Upper GI endoscopy at the emergency room (0.00 am)
2. Transfer to ICU, upper GI endoscopy within 3 hours (2.00 am)
3. Gastro ward and upper GI endoscopy first thing in the morning (8.00 am)
4. Gastro ward and elective endoscopy on monday morning

Suspicion of non-variceal gastro-intestinal bleeding

Upper GI bleeding management. Belgian guidelines for adults and children. Acta Gastroenterologica Belgica 2011; 74:45-66

STEP 1

RESUSCITATION
Aim: MAP > 65 mmHg and/or systolic BP > 100 mm Hg

Volume-expander	Cristalloids
Vasopressor *(if persisting hypotension)*	Noradrenalin
Blood transfusion	Aim: hemoglobin 8 g/dl (9-10g/dl if cardiovascular disease)
Intubation/sedation (if hematemesis, hemodynamic instability, altered mental status)	
Transfer ICU	Glasgow Blatchford score > 8 or Glasgow coma scale < 8

Suspicion of non-variceal gastro-intestinal bleeding

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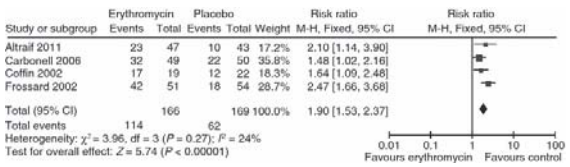
STEP 2

Erythromycin 250 mg IV/5 min.	PPI 40 mg IV
20 minutes before endoscopy	20 min. before endoscopy

Significant impact on - empty stomach - need for second endoscopy - blood transfusion - length of hospital stay	Lesser - stigmata of recent bleeding - need for endotherapy
No significant impact - endoscopic procedure time - mortality	No significant impact - mortality - rebleeding - need for surgery
Meta-analysis in Alim Pharm Ther 2011;34:166-171	*Cochrane review 2010; Jul 7*

Erythromycin before endoscopy for acute upper gastrointestinal bleeding

EMPTY STOMACH



250 mg erythromycin in 50 cc NaCl 0,9% IV over 5 minutes - endoscopy is performed 20 minutes after the end of the infusion

(other studies: 125 mg/50ml/10min – 250 mg/100ml/30min – 3mg/kg in 125 ml/30 min)

Meta-analysis in Alim Pharm Ther 2011;34:166-171

Erythromycin before endoscopy for acute upper gastrointestinal bleeding

Table 3. Meta-analysis of effects of erythromycin on secondary outcomes

	RR or mean difference (CI)	Z	P value	Heterogeneity		
				χ^2	P	I^2
Second endoscopy	0.56 (0.36, 0.88)	2.50	0.01	4.46	0.22	33%
Blood transfusion	−0.51 (−0.95, −0.07)	2.27	0.02	0.28	0.96	0%
Hospital stay	−0.98 (−1.54, −0.41)	3.39	0.0007	3.24	0.36	7%
Procedure time	−1.73 (−4.46, 1.00)	1.24	0.21	10.44	0.02	71%
Death	0.51 (0.17, 1.52)	1.21	0.23	0.36	0.55	0%

Significant impact on - need for second endoscopy
- blood transfusion
- length of hospital stay

No significant impact (NS) on - endoscopic procedure time
- mortality

Meta-analysis in Alim Pharm Ther 2011;34:166-171

PPI before endoscopy for acute upper gastrointestinal bleeding

THE COCHRANE COLLABORATION®

Cochrane review 2010; Jul 7

Six RCTs comprising 2223 participants

	PPI before endoscopy	PPI after endoscopy	OR (95%CI)
Mortality	6,1%	5,5%	1,12 (0,72-1,73)
Rebleeding	13.9%	16,6%	0,81 (0,61-1,09)
Surgery	9,9%	10,2%	0,96 (0,68-1,35)
Stigmata recent hemorrhage*	37,2%	46,5%	0,67 (0,54-0,84)
Need for endotherapy	8,6%	11,7%	0,68 (0,50-0,93)

*Stigmata: active bleeding, non bleeding visible vessel, adherent clot

Timing of endoscopy in suspected non-variceal upper GI bleeding

Belgian guidelines for adults and children.
Acta Gastroenterologica Belgica 2011; 74:45-66

STEP 3

Endoscopy

< 24h after admission

Quicker if Glasgow Coma Scale < 8

Timing of endoscopy in upper GIB and EBM?

LOW RISK			
Lee et al *GIE 1999;50:755-761*	110 patients HD stable	<2h vs. < 48h	Early endoscopy: early discharge / cheaper
Bjorkman et al *GIE 2004;60:1-8*	93 patients HD stable	<6h vs. < 48h	Early endoscopy may lead to early discharge (but is not always done)
HIGH RISK			
Lin et al (RCT) *J Clin Gastro* *1996;22:267*	All pts. Red blood in NG tube	<12h vs. > 12h	No advantage Less transfusion / shorter hospital stay
Lim et al (OBS) *Endoscopy* *2011;43:300*	934 pts NVGIB GBS >12	< 13h vs. > 13h	0 % vs. 44% mortality (p<0,001) Multivariate analysis: time from presentation to endoscopy
Targownik (retro) *Can J Gastro* *2007;21:425*	166 pts GBS>3 (HR>100 and BP<100)	< 6h vs. 6-24h *rapid vs early*	No difference in rebleeding, surgery need, mortality

Timing of endoscopy in suspected non-variceal upper GI bleeding

American College of Gastroenterology (2012)

Recommendations.
9. Patients with UGIB should generally undergo endoscopy **within 24 h of admission**, following resuscitative efforts to optimize hemodynamic parameters and other medical problems (Conditional recommendation, low-quality evidence).
10. In patients who are hemodynamically stable and without serious comorbidities endoscopy should be performed as soon as possible in a non-emergent setting to identify the substantial proportion of patients with low-risk endoscopic findings who can be safely discharged (Conditional recommendation, moderate-quality evidence).
11. In patients with **higher risk clinical features (e.g., tachycardia, hypotension, bloody emesis or NG aspirate in hospital) endoscopy within 12 h may be considered** to potentially improve clinical outcomes (Conditional recommendation, low-quality evidence).

Am J Gastro 2012;107:345-360

Timing of endoscopy in suspected non-variceal upper GI bleeding

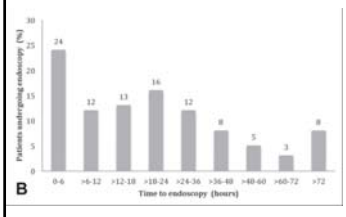
Diagnosis and management of nonvariceal upper gastrointestinal hemorrhage: European Society of Gastrointestinal Endoscopy (ESGE) Guideline

MR7. Following hemodynamic resuscitation, ESGE recommends **early (≤24 hours) upper GI endoscopy**.

Very early (<12 hours) upper GI endoscopy may be considered in patients with high risk clinical features, namely: hemodynamic instability (**tachycardia, hypotension) that persists despite ongoing attempts at volume resuscitation;** in-hospital bloody emesis/nasogastric aspirate; or contraindication to the interruption of anticoagulation (strong recommendation, moderate quality evidence).

Endoscopy 2015; 47(10): a1-a46

Timing of endoscopy
Daily practice (Canadian audit)



Median time to endoscopy was

17.7 h (IQR 6.1 h to 29.4 h).

Suspected variceal bleeding
12.4 h (IQR 4.5 h to 25.0 h)

Nonvariceal bleeding
18.3 h (IQR 6.3 h to 30.0 h)
(Variceal vs. nonvariceal: P=0.0038).

Overall, 65.6% of patients underwent endoscopy within 24 h.

Can J Gastroenterol Hepatol 2014;28 (9):495-501

Risks of "rapid" endoscopy

Oxygen desaturation / inappropriate resuscitation
HD unstable patient

Airway protection

Not enough visualisation

Need for a trained
endoscopy nurse/assistant

GASTRO-INTESTINAL EMERGENCIES IN ENDOSCOPY
SHOULD I STAY OR SHOULD I GO ?
for Endoscopists and Endoscopy Nurses

Blood pressure is normalized by fluid etc…and

1. Upper GI endoscopy at the emergency room (0.00 am)
2. Transfer to ICU, upper GI endoscopy within 3 hours (2.00 am)
3. Gastro ward and upper GI endoscopy first thing in the morning (8.00 am)
4. Gastro ward and elective endoscopy on monday morning

Guidelines: endoscopy within 12 h (US) or 24 h (EUR) / no need for ICU

BSGIE

Suspected non-variceal upper GI bleeding

SHOULD I STAY OR SHOULD I GO ?
for Endoscopists and Endoscopy Nurses
THURSDAY 22 SEPTEMBER 2016 - KINEPOLIS IMAGIBRAINE

Always within 24 hours after admission

Low risk	High risk
Early endoscopy leads to early discharge	Within 12 hours Use your common sense!

BSGIE