Usefulness of prognostic indices in upper gastrointestinal bleeding

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Introduction

- to identify those individuals at high risk of requiring treatment (transfusion, endoscopic or surgical intervention) or of re-bleeding or death.
- to identify individuals at low risk of complications, as these may be discharged early, possibly with outpatient endoscopy.
- mortality rates of approximately 11–14% rising to 33% for patients developing secondary UGIB following admission for other reasons.

Prognostic Indices

- Forrest classification

Table 2. Forrest classification of stigmata of recent haemorrhage and associated re-bleeding rates.[13]

Class	Endoscopic observation	Re-bleeding rate
Ia	Spurting arterial haemorrhage	80–90
Ib	Oozing haemorrhage	10–30
IIa	Non-bleeding visible vessel	50–60
IIb	Adherent clot	25–35
IIc	Black spot in ulcer base	0–8
III	Clean ulcer base	0–12

Table 3. Rockall scoring system for risk analysis of acute upper gastrointestinal haemorrhage.[2]

Variable	Score			
	0	1	2	3
Age (years)	<60	60–79	>80	
Shock	'No shock' Systolic BP >100 mmHg Heart rate <100 beats/min	'Tachycardia' Systolic BP >100 mmHg Heart rate >100 beats/min	'Hypotension' Systolic BP <100 mmHg	
Co-morbidity	No major co-morbidity		Cardiac failure Ischaemic heart disease Any major co-morbidity	Renal failure Liver failure Disseminated malignancy
Diagnosis	Mallory–Weiss tear No lesion identified No stigmata of recent haemorrhage	All other diagnosis	Malignancy of upper gastrointestinal tract	
Major stigmata of recent haemorrhage	None or dark spot only		Blood in upper gastrointestinal tract Adherent clot Visible or spurting vessel	

Rockall score

- Soncini et: low (0–2), medium (3–5) and high (>6) scores

Table 4. Risk of re-bleeding and mortality as observed by Rockall score.

	Score								
	0	1	2	3	4	5	6	7	8+
Re-bleed %	4.9	3.4	5.3	11.2	14.1	24.1	32.9	43.8	41.8
Deaths (total %)	0	0	0.2	2.9	5.3	10.8	17.3	27.0	41.1

- mainly utilised within non-variceal UGIB

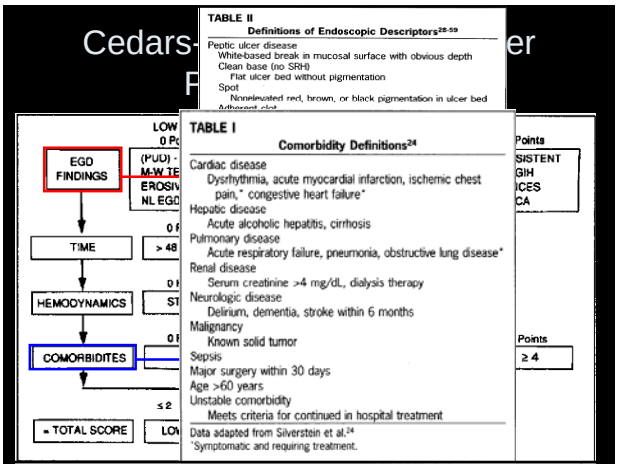
Blatchford score

- For not only risk of further bleeding or dying, but who would require blood transfusion or intervention to stop bleeding
- presentation with syncope or melaena, evidence of hepatic or cardiac disease, pulse and blood pressure, haemoglobin and urea
- triage patients into 'high-risk' and 'low-risk' groups
- high sensitivity for identifying 'high-risk' patients in 99% to 100%, but poor specificity (13%).

Other prognostic scores

- Baylor College score
  - three-point score post-endoscopy
  - re-bleed rates of 31% for ‘high-risk’ patients and 0% for ‘low-risk’ patients
- Cedars–Sinai Medical Center predictive index
  - to reduce length of hospital stay
  - Early discharge may be possible in 33% of patients

Cedars–Sinai Medical Center predictive index



Prognostic Score and Early Discharge

	Blatchford scores	clinical Rockall scores (>0)	complete Rockall scores(>2)
sensitivity	99.6%	90.2%	91.1%
specificity	25%	38%	78%

- Rockall score accurately predicted re-bleed rates within low-risk (0–2) and medium-risk (3–5) categories, whilst Baylor and Cedars–Sinai scores underestimated.

Variceal Bleeding

- Child–Pugh score
- MELD (Model of End-Stage Liver Disease) score

Child–Pugh score

Table 5. Severity scores used for calculating the Child–Pugh score.

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 < 6; Child–Pugh class B 7–9; Child–Pugh class C ≥ 10.
INR, international normalised ratio.

MELD score

- predict survival outcomes of patients with complications of portal hypertension referred for placement of trans-jugular intrahepatic portosystemic shunts
- log calculations of creatinine, bilirubin, and international normalised ratio (INR)
- superiority at predicting short-term survival and the presence of hepatocellular carcinoma at presentation.

Non-specialist risk scores

- APACHE score
  - perioperative mortality is correlated with the preoperative APACHE score
- SAPS score
  - determining individuals suitable for surgery.

Thanks.