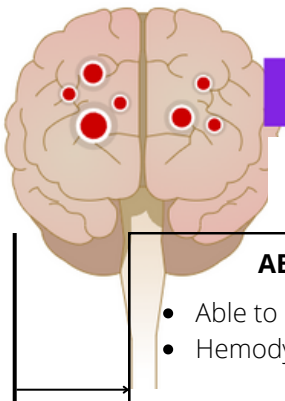
Diagnosis and Immediate Management



Overt Hepatic Encephalopathy

Diagnosis and Immediate Management

Patient with known cirrhosis presenting with an altered mental state

ABC - does the patient need ICU (if within their goals of care)?

- Able to protect airway?
- Hemodynamically stable?

Tools to grade HE severity:

Subjective tool for grading - Modified West Haven criteria

Objective tool for grading - CHESS

Alternate objective tool for grading - Glasgow Coma Scale

What other diagnoses should be considered on the differential diagnosis?

- **Differential diagnosis* can include:**

D (Drugs/toxins)
I (Infection - primary CNS or alternate site)
M (Metabolic - glucose, sodium, calcium, thyroid, CO2, O2 abnormalities)
S (Structural - primary CNS - tumor hemorrhage, edema, seizure, underlying dementia)
O (Other - psychiatric disease, shock)
**Many of these causes can also precipitate HE*

Identify and treat acute precipitants

- **Lack of compliance with Lactulose, Rifaximin***
- **Constipation**
- **Medications**
- **Infection**
- **GI Bleeding**
- **Metabolic abnormalities (renal injury, hypokalemia, dehydration, hypovolemia, hypoxia)**
- **Diuretics - in some cases, this may be the only precipitant even in the absence of metabolic abnormalities**

See more info on medications to use with caution in HE

*Do not assume that HE is the result of non-compliance to Lactulose or Rifaximin before ruling out other precipitants

Initiate empiric therapy for overt hepatic encephalopathy

Safe/able to tolerate oral intake?

YES

First Line
Lactulose 30mLs PO Q1-2H until bowel movement or clinical improvement

Evidence less strong: PEG 3350 PO give 2-4 litres

NO

First Line
Lactulose 45mLs PO NG Q1H until bowel movement or clinical improvement OR

- Lactulose enema (300 mLs Lactulose in 700mLs water) Q4H until clinical improvement. Retain enema for 30 to 60 minutes

Evidence less strong: PEG 3350 NG 3-4 Liters

Improvement?

YES

Start secondary prophylaxis

- **Lactulose 15-30mLs PO BID** (titrate to achieve 2-3 soft bowel movements per day)

AND

- **Rifaximin 550mg PO BID*** (reduces recurrent HE and hospitalizations; consider it with lactulose intolerance, >1 episode of overt HE, or persistent HE despite lactulose therapy)

*If starting Rifaximin in hospital, complete special authorization forms to ensure that your patient will have access post-discharge *(Alberta - Alberta Special Authorization Form)*

NO

Is the diagnosis correct?

- Look for causes of **Refractory HE**
- If high suspicion for HE, consider **Rifaximin** 550mg PO BID

Additional information on causes of HE:

Refractory HE should be worked up in conjunction with a liver specialist. The differential diagnosis includes:

- Failure to identify a common precipitant (consider whether any of the listed precipitants under general management including diuretics may be contributing)
- Profound zinc deficiency
- Other causes of altered mental status
- Transjugular portosystemic shunt (TIPS) or spontaneous portosystemic shunts

TIPS reduction

- In patients with TIPS and recurrent HE, TIPS reduction can be considered after consultation with a liver specialist about the risks and benefits. If NSBBs were needed for variceal prophylaxis before the TIPS, they will be required after TIPS reduction

Embolization of spontaneous portosystemic shunts

- In an otherwise compensated patient without a clear precipitant for recurrent HE, cross-sectional imaging can be used to look for embolizable spontaneous splenorenal shunt. Embolization requires preserved liver function (MELD <12) and should only be performed at a center with experience, and guided by a liver specialist.