The Faculty of
Intensive
Care Medicine

Acute on Chronic Liver Failure

Set-up:	Intensive Care Unit
Lines/access:	2 x pink peripheral venous cannulae, 1 x Rt IJV CVC
Infusions:	Hartmanns running, 250mL STAT
Airway:	SV
Ventilator:	Nil
Other:	Drug chart from previous hospital, ICU drug chart Patient's notes, bloods, VBG x 2, CXR x1, ECG x2 Previous OGD report, CIWA chart

Clinical setting:

I: You are the ICU Registrar and are asked to see a hypotensive patient who has arrived earlier from another hospital.

S: Transferred from a DGH following admission with symptoms of upper GI bleed. OGD: Grade 3 oesophageal varices found, 6 varices banded. Further bleeding so transferred for assessment for TIPSS, currently NBM.

B: 35M, BG alcohol related liver disease.

A: Patient remains hypotensive despite 3L crystalloid and colloid resuscitation during transfer. Is on terlipressin.

R: Asked to review patient.

Potential Clinical Course:

- Features of chronic liver disease present on assessment.
- Patient hypotensive and hyperdynamic in context of acute decompensation.
- No further evidence of bleeding, no haematemesis and no melaena, no Hb drop on blood gas.
- Confused, not able to assess for liver flap, has grade III encephalopathy, last CIWA score 4.

- Blood pressure responds transiently to fluid bolus if given up to 99/52, but drops again to 89/43 shortly after.
- If repeated fluid boluses are given, patient desaturates and develops oxygen requirement.
- Blood pressure responds well to commencing noradrenaline via CVC, MAP >65 achieved with norad 0.1mcg/kg/min.
- Patient is snoring, rousable but very drowsy and very incoherent in speech. No suggested interventions improve this.

This Simulation Scenario has been written by Dr Sabyha Khan and edited by Dr Jonathon Wong, produced by Dr Melia and approved by the FICM Education Sub-Committee. If you have any queries, please contact FICM via contact@ficm.ac.uk.

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Key steps:

- Volume replacement with colloid (blood/albumin) but recognition for need for pressors as no sustained improvement, aiming MAP >65 and Hb >70.
- Recognition of need for intubation and neuroprotective measures to manage encephalopathy.
- Consideration of correction of clotting with vitamin K 10mg OD IV for three days and consider TEG (if available).
- Sends ammonia and considers ammonia lowering therapies and whether patient may require haemofiltration.
- Consider baseline CT Head after intubation.
- Liaises with hepatology team re: next steps and assessment for TIPSS.
- Ascitic Tap to rule of SBP as cause for decompensation.

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Info Sheet For Faculty:

Observations:

- On arrival, patient SV
- RR 16, sats 97% on 2L via NC
- BP 92/43, HR 115 sinus tachycardia
- Grade III encephalopathy, PEARL, T35.5, BM 3.1
- Jaundiced, abdomen distended, caput medusae on the abdomen, non-tender. Calves soft, some bruising to the lower and upper limbs, spider naevi on the chest, peripherally oedematous (low albumin)
- FB currently +3L, UO 10/15/10, Cr 187 (baseline 110), Ur 22
- Patient NBM, no further episodes of haematemesis or malaena
- Hb74, Plt 52, INR 2.6, no anticoagulants or anti-platelets
- On piperacillin/tazobactam from referring hospital

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Faculty Roles:

Bedside Nurse 1:

- You are a senior and experienced ITU nurse
- You are concerned that this patient remains hypotensive despite two fluid boluses since his transfer
- On arrival, the blood pressure was 120/56, but this has subsequently dropped
- You are helpful and efficient in completing tasks
- You offer suggestions when the candidate is unsure
- You have a trolley prepared with intubation equipment and the drugs required which are already drawn and labelled.

Hepatology/Gastroenterology SpR (over phone):

- You are not immediately available to attend but agree to prioritise this patient
- You provide helpful advice over the phone

HiLLO: 1, 2, 4, 5, 6

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