

Cirrhotic Admitted to the Hospital

Notify the patient's outpatient Michigan Medicine hepatologist of the admission (by e-mail or in-basket message, if followed in MM Hepatology Clinic in last 3 years)

The antibiotic tables referred to in this algorithm can be found at: <https://goo.gl/yojp5j>

Patient confused, has melena/hemetemesis, or has ascites?
(Treat any and all that apply)

Altered mental status

Address common causes of AMS/HE precipitants

- Noncompliance with lactulose ± rifaximin
- Medications (narcotics, benzodiazepines)
- Infection (?UTI, PNA, SBP)
- Electrolyte derangement/dehydration

1. Start lactulose at induction dosing (30 g q2 hours) to induce bowel movement (BM). Once mental status begins to clear, change to maintenance dosing (e.g., 30 grams TID, or an increase in the home dose) and titrate the dose to a goal of 3 BMs per day.
2. Start rifaximin 550 mg BID
If new med: Contact Transitions of Care Pharmacy Tech (pager 34978) ASAP to check insurance coverage

If AMS has not resolved within 48 hours of starting lactulose, consult hepatology for assistance

Melena, hematemesis

- Start antibiotics per ID guidelines (See Table, "Prophylaxis in Patients with Cirrhosis and GI Bleeds")
- Start Octreotide infusion
- Consult Hepatology for EGD (discuss the use of blood product such as PRBCs, platelets, FFP, etc. with Hepatology)
- For all upper GI bleeds in cirrhotic patients, continue antibiotics for 5-7 days (see Table for oral options)

Confirmed variceal bleed

1. Continue octreotide drip for 72 hours (unless patient gets TIPS)
2. Discuss the use of a non-selective beta blocker with Hepatology, after the patient stabilizes.

Ascites

Consult hepatology for all patients with symptomatic ascites, AKI, new or worsening hyponatremia, SBP, or requirement for diuretic dose adjustment.

Diagnostic paracentesis (this should be done on all hospitalized patients with ascites, as SBP can be asymptomatic)

- Do not delay for elevated INR or thrombocytopenia
- Send for cell count/gram stain, culture, albumin, and total protein

SBP diagnosis?
> 250 PMNs/mm³ in ascitic fluid (or positive culture)-this number should be adjusted for bloody ascites by subtracting 1 PMN for every 250 RBCs/mm³
(Note: Abx prior to paracentesis can lower PMN count and will likely make culture negative)

1. Start antibiotics promptly (See Table, "Spontaneous Bacterial Peritonitis")
2. Give 1.5 g/kg 25% albumin on day 1 (Max 100 g)
3. Give additional 1 g/kg 25% albumin on day 3 (Max 100 g)
4. Hold diuretics and large volume paracentesis in patients with SBP or AKI
5. Prescribe antibiotics on discharge for secondary prophylaxis (see Table, "Prophylaxis in Patients at High Risk for Spontaneous Bacterial Peritonitis")

For symptomatic ascites:

1. Identify precipitants of worsening ascites
 - Noncompliance with sodium restricted diet
 - NSAID use
 - alcohol use
2. Nutrition consult for 2 g/d sodium restricted diet education
3. Therapeutic paracentesis (max volume 8 liters): Appropriate for symptomatic patients with stable renal function and no SBP
 - If > 4L removed, prescribe 25% albumin 6-8 g IV for every liter of ascites removed
4. Diuretics
 - Diuretic naive: start lasix 20 mg po daily and spironolactone 50 mg po daily
 - If on diuretics: consider dose increase while maintaining the ratio of lasix:spironolactone of 20:50 mg

Cirrhotic Hospital Discharge Checklist

Patients can safely be discharged when all of the following have been achieved:

- Follow up Hepatology/GI appointment is arranged (goal within 7 days of discharge if admitted with any of the above diagnoses)
 - Please notify the patient's Michigan Medicine hepatologist of the discharge, by e-mail or in-basket message
- Discharge medication availability has been verified
 - Contact Transitions of Care Pharmacy Tech to ensure medication coverage, and contact patient's pharmacy to ensure availability, especially for rifaximin (if indicated)
- If diuretics were adjusted, or if the patient had electrolyte abnormalities or AKI, order outpatient BMP 3-5 days after discharge (labs to be ordered by inpatient hepatology team or outpatient hepatology clinic)