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CIRRHOSIS

2025 CLINICAL PATHWAY

Version 5/2025

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CIRRHOSIS DECISION PATHWAY

COMPENSATED

EVERY 6 MONTHS:

- **Complete labs:** CBC, CMP, **AFP**, PT/INR
- **Calculate MELD 3.0 score**
- **HCC screening:** Trend AFP results (do not rely solely on current result) and complete **US** every 6 months (consider alternating US with MRI or CT scan if US results are sub-optimal) - if lesion is present, monitor every 3-6 months. If lesion disappears, return to 6-month screening. Lesions > 1cm should have contrast-enhanced CT or MRI. Use LI-RADS to assess HCC risk.
- **ROV** (or sooner as needed)

EVALUATE FOR COGNITIVE CHANGES ASSOCIATED WITH HEPATIC ENCEPHALOPATHY

(Possible assessment tools listed below)

- **West Haven criteria** (**See Criteria for HE Box***)
- **Cognitive testing:** ask patient to spell a 5-7 letter word backwards or ask patient to draw a star
- **QR code: HE** patient assessment tool located within pathway

ANNUALLY:

Complete **TE**

Evaluate for clinically significant portal hypertension (**CSPH**) with **TE** (if TE unavailable, can perform EGD for variceal screening)

Consider treatment with NSBBs for patients who meet one of the following criteria:

- EGD showing small to medium varices not requiring banding
- Gastroesophageal varices on imaging
- Patient meets criteria of CSPH based on criteria on below table:

Non-invasive staging of chronic liver disease	No cACLD	Possible cACLD	Highly suggestive of cACLD	cACLD	
Liver stiffness (kPa)	<10	10-15	15-20	20-25	>25
Platelet count (K/mm^3)	NR	NR	If <110 = CSPH	If <150 = CSPH	CSPH

EVIDENCE OF CSPH

PHARMACOLOGIC TREATMENT

Start NSBBs if appropriate

Titrate dosing to achieve heart rate ~60 bpm, Systolic BP >90

- **Carvedilol (first line):** start at 6.25mg daily, then increase to 6.25mg twice daily if tolerated after 3-7 days
- **Propranolol:** 20-40mg twice daily
- **Nadolol:** 20-40mg nightly

(Advise NSBBs can increase fatigue and orthostatic hypotension)

EGD SCREENING

EGD Screening with no varices

Re-screen in 2-3 years (if not on **NSBBs**) or when decompensation occurs or when clinically appropriate

Small varices

EGD surveillance in 1 year or when clinically appropriate

NO EVIDENCE OF CSPH

NO EVIDENCE OF CSPH

kPa < 20, platelets > 150,000 (EGD Optional)

ROV 6 MONTHS

AT TIME OF DIAGNOSIS:

Complete labs: ANA, AMA, ASMA, A1AT, Ceruloplasmin, Iron, TIBC, Ferritin, HBsAg, HBsAb, HBcore Ab, HCV Ab, Hep A total antibody and PEth test; consider checking IgG if ANA is positive

Ensure patient has been vaccinated for Hepatitis A & B, flu, PCV20, and tetanus Q10 years

Consider referral for transplant evaluation if symptoms of decompensation are present or MELD 3.0 ≥ 15

DECOMPENSATED

Managing Complications of Cirrhosis

At first sign of decompensation, schedule patient for EGD

EVERY 3 MONTHS:

- **Complete labs:** CBC, CMP, **AFP**, PT/INR
- **Calculate MELD 3.0 score**
- **ROV** (or sooner as needed)

EVERY 6 MONTHS:

- **HCC screening:** Consider HCC screening with same protocol as compensated pathway to the left if patient has good functional status (ECOG 0) and hepatic decompensations can be controlled.

ANNUALLY:

- Complete EGD

ASCITES

New onset ascites requires diagnostic paracentesis

DIURETICS

- 50-100mg **spironolactone** and 20-40mg **furosemide**, titrate as necessary.
- Start and titrate in a ratio of 50mg **spironolactone** to 20mg **furosemide** (double each dose when adjusting)
- BMP in 1 week with any dose adjustment

OR

- Consider baseline spot urine sodium-to-potassium ratio test with goal of sodium>potassium. Repeat spot urine/BMP in 1 week to assist with titration of diuretics

PARACENTESIS

Recommend sending fluid for analysis on first procedure:

Fluid cell count with differential, culture, albumin, cytology, and total protein concentration

- Antibiotic treatment should be considered in patients with a polymorphonuclear leukocyte (PMN-C) ≥ 250/mm^3
- Calculate Serum-Ascites Albumin Gradient (SAAG)

Ensure referral to hepatology is in place, recommended follow-ups no less than every 3 months until able to be evaluated by hepatology

- If prior history of **SBP**, continue prophylactic antibiotics until ascites resolves or transplant

VARICES

Large varices or varices with red wale markings

- Banding-usually occurs every 4 weeks (or as directed by provider) until eradicated. After eradication EGD every 6-12 months for surveillance
  - Educate on importance of follow-up EGDs. Ensure follow-up EGD is scheduled at time of return office visit
- Consider **NSBBs** if appropriate
  - Titrate dosing to achieve heart rate ~60 bpm, Systolic BP >90
- **Carvedilol (first line):** start at 6.25mg daily, then increase to 6.25mg twice daily if tolerated after 3-7 days
- **Propranolol:** 20-40mg twice daily
- **Nadolol:** 20-40mg nightly
- Dual therapy is indicated (banding and NSBB) once variceal bleeding occurs

HEPATIC ENCEPHALOPATHY

Consider and address common precipitating factors

- **Constipation** - daily BMs?
- **Diarrhea** - history
- **GI bleeding** - dark or tarry stools?
- **Hypoglycemia** - lab results/**FSBS**
- **Hypovolemia** - low BP/increased HR
- **Hypoxia** - SpO2
- **Infection** - lab results, fever
- **Noncompliance with medications**
- **Kidney failure**
- **Substance abuse**
- **Use of psychotropic drugs** - sleeping pills or sedatives

Educate on safety precautions

- (fall risk, when to seek emergency care, do not drive)

PHARMACOLOGIC CONSIDERATIONS

- **lactulose** 15 to 45ml, titration goal 2-3 BMs daily
- Consider **rifaximin** 550mg twice daily for reduction of overt hepatic encephalopathy recurrence risk after the acute episode
- **lactulose** and **rifaximin** may be used as monotherapy or in combination

IMPROVEMENT

- Continue **lactulose**, **rifaximin** or combination as long-term therapy
- **rifaximin** 550mg twice daily can reduce the risk of overt hepatic encephalopathy recurrence
- Consider referral to hepatology

NO IMPROVEMENT

Consult with hepatology for guidance

SIDE EFFECT MANAGEMENT

If patient is having issues tolerating **lactulose**, may consider trial of Miralax

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CIRRHOSIS RESOURCES & REFERENCES

REFERENCE KEY

ACE-I: ACE (Angiotensin-converting enzyme) inhibitors
AFP: Alpha fetoprotein
AMA: Anti-mitochondrial antibody
ANA: Antinuclear antibody
ARB: Angiotensin receptor blockers (Avapro, Atacand, Benicar, Cozaar, Diovan, Edarbi, Micardis)
ASMA: Anti-smooth muscle (F-actin) antibody
A1AT: Alpha-1-anti-trypsin
CSPH: Clinically significant portal hypertension
FSBS: Finger stick blood sugar
HBsAg: Hepatitis B surface antigen
HBsAb: Hepatitis B antibody
HE: Hepatic encephalopathy
MELD: Model for end-stage liver disease
NSBB: Non- selective beta blocker
PEth test: Phosphatidylethanol (byproduct of alcohol)
ROV: Return office visit
SBP: Spontaneous bacterial peritonitis
TE: Transient elastography
TIBC: Total iron-binding capacity
US: Ultrasound

* ASSESSING FOR HEPATIC ENCEPHALOPATHY

- Hepatic encephalopathy can affect up to 80% of patients with cirrhosis
- *It is important to interview close family members or caretakers when inquiring about symptoms*

WEST HAVEN CRITERIA FOR HEPATIC ENCEPHALOPATHY

WHC Including MHE	ISHEN	Description
Unimpaired		• No encephalopathy at all, no history of HE
Minimal	Covert	• Psychometric or neuropsychological alterations of tests exploring psychomotor speed /executive functions or neuro- physiological alterations without clinical evidence of mental change
Grade I	Covert	• Trivial lack of awareness • Euphoria or anxiety • Shortened attention span • Impairment of addition or subtraction • Altered sleep rhythm
Grade II	Overt	• Lethargy or apathy • Disorientation for time • Obvious personality change • Inappropriate behavior • Dyspraxia • Asterixis
Grade III	Overt	• Somnolence to semistupor • Responsive to stimuli • Confused • Gross disorientation • Bizarre behavior
Grade IV	Overt	• Coma

WHC: West Haven criteria; MHE: minimal hepatic encephalopathy; ISHEN: International Society for Hepatic Encephalopathy and Nitrogen Metabolism; HE: hepatic encephalopathy.

§ GENERAL GUIDANCE TO EVALUATE AND CONSIDER

DIETARY CONSIDERATIONS:

- Direct patient to Cirrhosis Nutrition Therapy QR code for dietary management
- Dietitian consultation is highly recommended
- **Caloric intake:** 30-35 kcal/kg dry body weight
- **Protein intake:** 20-30% of calories from protein (1.25 to 1.5 g protein/kg body weight)
- Encourage plant-based or dairy protein over meat-based protein
- Avoid prolonged fasting; 4-6 small meals a day, 1 should be a late-evening, **protein-rich** snack
- Sodium intake <2,000 mg/day. Encourage patient to avoid frozen foods aisle in supermarket
- Fluid restriction is not necessary unless hyponatremia is present
- Avoid raw oysters

- Limit acetaminophen to <2 grams daily
- DO NOT USE NSAIDS, narcotics, or benzodiazepines
- Pause beta blockers until severe ascites is controlled
- Cautious use of medications that decrease renal perfusion (ACEs, ARBs)
- Reinforce teaching on alcohol abstinence **regardless of the cause of liver disease**
- Advise patient to weigh at the same time daily. Report weight increases of 2 pounds on 2 consecutive days **OR** a 5 pound increase/week **OR** weight decrease >7 pounds/week
- Educate on s/s of spontaneous bacterial peritonitis and when to seek emergency care (sharp constant belly pain, fever, trouble breathing, severe n/v)
- Considerations for difficulty sleeping
  - If cramping consider baclofen, tonic water, or zinc (check levels first)
  - Trazodone
- Consider Vitamin D screening
- Ammonia testing is not recommended
- Direct patients to online mental status assessment tools, e.g., EncephalApp

INPATIENT TO OUTPATIENT TRANSITION OF CARE

- Consider adding a trigger from the EMR to hospital pharmacy to fill discharge meds; have hospital pharmacy do necessary prior authorizations if possible
- Educate hospital pharmacists on transition of care for cirrhotic patients
- Write discharge prescriptions for longer than two weeks to bridge the gap from discharge to follow-up appointment

‡ PRIOR AUTHORIZATION GUIDE FOR rifaximin

- K76.82 Hepatic Encephalopathy
- Indicate therapies tried and failed (ie: lactulose)
- Copay assistance card is available for commercial insurance holders
- If denied, letter of necessity is available on the rifaximin website

Important Signs and Symptoms for Patients with Chronic Liver Disease

Dietary Guidance for Ascites in Patients with Cirrhosis

Cirrhosis Nutrition Therapy

Cirrhosis Nutrition Video

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ADDITIONAL RESOURCES

SCAN TO FIND THE RIGHT EVENT FOR YOU

View our upcoming national conferences and roundtables, and practice and role-specific summits, seminars and workshops.

SCAN FOR ADDITIONAL RESOURCES

Scan here to view a list of available clinical guidelines and pathways.

Key Opinion Leaders

- **Parag Chokshi, MD**
  GI Alliance
- **Charles Hall, MD**
  GI Alliance
- **Jorge Herrera, MD**
  Whiddon College of Medicine,
  University of South Alabama
- **David Kim, MD**
  GI Alliance
- **Eric Newton, MD**
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