ACG GUIDELINE Highlights

Perioperative Risk Assessment and Management in Patients with Cirrhosis

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Risk Factors

Degree of portal hypertension is one of the most important surgical risk factors

Operative Risk Factors

Cirrhosis Risks	• Etiology • PHTN	• Hemostatic markers • Disease severity	• Decompensation • Synthetic function	• Nutrition status • Immune response
Non-Hepatic Patient Risks	• Demographics • BMI	• Alcohol/tobacco use • Sarcopenia	• Malnutrition • Frailty	
Surgery Risks	• Type/complexity • Organ system	• Elective vs emergent • Laparoscopic vs. open	• Duration • Anesthesia management	• Transfusions • Center volume and expertise

Special Considerations

Very low platelet counts (<50-75/µL)
- Independently associated with procedural bleeding and adverse post-op outcomes in cirrhosis.
- May reflect severity of liver function and PTHN

PT/INR
- Not independently associated with procedural bleeding

Malnutrition
- Nutritional optimization, high calorie (30-35 kcal/kg/day) and high protein (1.25-1.5g/kg/day) at least 2 weeks prior to surgery
- Nasoenteric feeding may be required in selected patients

Management

Preoperative Risk Stratification and Optimization Pathways

Compensated cirrhosis/unclear CSPH
- Obtain liver stiffness and platelet count assessment to rule in CSPH
- Obtain cross-sectional imaging to identify portosystemic collaterals/PHTN

Cirrhosis and severe thrombocytopenia (<50,000/µL)
- If undergoing invasive procedures → use thrombopoietin receptor agonists* dosed according to baseline platelet count ↓

**These agents reduce the need for perioperative transfusion and reduce the risk of bleeding*

Cirrhosis/CSPH/Indication for TIPS/Transplant
- Consider preoperative TIPS on case-by-case basis
- Must consider center-level of expertise, extent/urgency of surgery, transplant candidacy
- Pre-operative liver transplant evaluation if projected 90-day post-op mortality risk is >15%. Can be estimated using scoring*

**In addition to clinical judgement, MELD, CTP, Mayo, and VOCAL-Penn Scores are useful to estimate operative risk.*

Cholecystectomy	Bariatric surgery	Hernia repair
• Laparoscopic is favored in CTP A & B cirrhosis • CTP C have prohibitive risk/consider PTC or endoscopic drainage	• Can be safely done in well-compensated patients • Laparoscopic sleeve is preferred	• Optimize ascites control may reduce complications such as incarceration and spontaneous rupture

Control the Controllables

Strict smoking and alcohol cessation	Treat reversible hepatic insults (Hepatitis B/C, AIH, etc.)	Stay current with routine cirrhosis management (HCC screening, etc.)

AIH = Autoimmune hepatitis
CSPH = Clinically significant portal hypertension
HCC = hepatocellular carcinoma
Hep = hepatitis
Op = Operative
PTC = Percutaneous
PTHN = Portal hypertension

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