Crescent City GI, Endoscopy and Liver Update: Managing the complications of cirrhosis

Cristal Brown, MD
March 31, 2017
Presentation Outline

• **What is cirrhosis and portal hypertension?**
  – Compensated cirrhosis
  – Decompensated cirrhosis and portal hypertension
  – Cirrhosis Healthcare Maintenance

• Ascites
• Electrolyte imbalances: Hyponatremia, Hypokalemia
• Spontaneous bacterial peritonitis
• GI bleeding
• Portal vein thrombosis (PVT)
• Hepatic encephalopathy
• Hepatorenal syndrome
• Malnutrition
• HCC
• Palliative care and Hospice
What is cirrhosis?

- Cirrhosis is defined as the histological development of regenerative nodules surrounded by fibrous bands in response to chronic liver injury, that leads to portal hypertension and end stage liver disease.
Compensated cirrhosis
Decompensated Cirrhosis and Portal Hypertension

https://www.slideshare.net/annoy007/management-of-liver-cirrhosis
https://www.slideshare.net/pratapsagar/understanding-portal-hypertension
Cirrhosis Healthcare Maintenance

- Alcohol abstinence
- Tobacco abstinence
- Vaccinations: Hepatitis A, B, Influenza, Pneumovax, Tetanus (Tdap)
- Screening for osteoporosis
- Variceal screening
- HCC screening
- Tylenol 2gm/d for minor pain
- Complete avoidance of NSAIDs
- Avoid unnecessary medications and discuss all herbal medications prior to initiation

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Ascites/volume overload management

- **Low sodium diet**
  - Provide patient handouts
  - Concern dietitian referral
- **Diuretic therapy**
- **Large volume paracentesis**
- **Transjugular intrahepatic portosystemic shunt (TIPS)**
- **Peritoneal catheter**
Low sodium diet (2gm)

<table>
<thead>
<tr>
<th>High Sodium</th>
<th>Low Sodium</th>
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</thead>
<tbody>
<tr>
<td><strong>Meats, Poultry, Fish, Legumes, Eggs &amp; Nuts</strong></td>
<td>- Any fresh or frozen beef, lamb, pork, poultry &amp; fish</td>
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<tr>
<td>- Smoked, cured, salted or canned meat, fish or poultry including bacon,</td>
<td>- Eggs and egg substitutes</td>
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<tr>
<td>cold cuts, ham, franks, sausage, sardines, anchovies</td>
<td>- Low-sodium peanut butter</td>
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<tr>
<td>- Frozen breaded meats &amp; dinners, such as burritos &amp; pizza</td>
<td>- Dry peas &amp; beans (not canned)</td>
</tr>
<tr>
<td>- Canned entrees (ie. Ravioli, Spam)</td>
<td>- Low-sodium canned fish</td>
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<tr>
<td>- Salted Nuts</td>
<td>- Drained, water or oil packed canned fish or poultry</td>
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<tr>
<td>- Beans canned w/ salt added</td>
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<table>
<thead>
<tr>
<th>Dairy Products</th>
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<tbody>
<tr>
<td></td>
<td><strong>Buttermilk</strong></td>
<td><strong>Milk, yogurt, ice cream &amp; ice milk</strong></td>
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<tr>
<td></td>
<td>**Regular and processed cheese, cheese spreads &amp; sauces</td>
<td>**Low-sodium cheeses, cream cheeses, ricotta, &amp; mozzarella</td>
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<td></td>
<td><strong>Cottage cheese</strong></td>
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<thead>
<tr>
<th>Breads, Grains, &amp; Cereal</th>
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<tbody>
<tr>
<td></td>
<td><strong>Bread &amp; rolls w/ salted tops</strong></td>
<td><strong>Plain breads, bagels &amp; rolls</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Quick breads, self-rising flour</strong></td>
<td><strong>Muffins &amp; most cereals</strong></td>
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<tr>
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<td><strong>Pizza, croutons &amp; salted crackers</strong></td>
<td><strong>All rice &amp; pasta (don’t add salt)</strong></td>
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<tr>
<td></td>
<td><strong>Prepackaged mixes for potatoes, rice, pasta, &amp; stuffing</strong></td>
<td><strong>Corn/flour tortillas &amp; noodles</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Low-sodium crackers &amp; chips</strong></td>
</tr>
</tbody>
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Peritoneal catheter

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Hyponatremia

• Sodium < 130 mEq/L
• Assess mental status
• Hold diuretic therapy
• Fluid restriction
• Vaptan, V2 receptor antagonists
• Consider adrenal insufficiency
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Spontaneous Bacterial Peritonitis

- **Diagnostic paracentesis** prior to initiation of antibiotics if possible
- Cell count, gram stain, and fluid culture
  - PMNs ≥ 250, empirically treat
- If cell count is markedly elevated or multiple organisms present, **THINK SECONDARY PERITONITIS**
- Discharge with prophylactic antibiotics (generally Bactrim or ciprofloxacin)
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GI bleeding

• Esophageal varices
  – Primary prophylaxis
  – Secondary prophylaxis

• **Gastric varices**

• Rectal varices

• Portal hypertensive gastropathy

• Other common causes of GI bleeding: ulcers, angioectasias
Gastric variceal hemorrhage

- Non-selective beta-blocker for primary prevention
- Endoscopic Variceal Ligation (banding)
- Cyanoacrylate injection
- TIPS
- BRTO

Balloon Occluded Retrograde Transvenous Obliteration (BRTO)
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Portal vein thrombosis: To anticoagulate or not anticoagulate That is the question?

Fig. 4 CT abdomen/pelvis demonstrating occlusive portal vein thrombosis. E, inferior vena cava G, common hepatic artery J, right portal vein K, left portal vein thrombosed.

Medscape Source: South Med J © 2009 Lippincott Williams & Wilkins
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Hepatic encephalopathy

- Lactulose
- Rifaximin
- Oral branched chain amino acids
- IV L-ornithine L-aspartate
- Sodium benzoate
- Neomycin
- Metronidazole
- Zinc
- Consider driving restrictions

https://www.slideshare.net/RINA7373/hepatic-encephalopathy-35951607
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Hepatorenal syndrome

- Obtain urine studies
- Albumin challenge
- Octreotide, midodrine
- Norepinephrine in ICU setting
- Early renal consultation to follow need renal replacement therapy
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Malnutrition

Impact of Malnutrition

- Low mood
- Weight loss
- Low energy
- Muscle wasting
- Increased risk of fractures
- Increased risk of hospital admissions
- Reduced mobility
- Increased risk of falls
- Reduced independence
- Infections
- Confusion
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Hepatocellular carcinoma

• Screening guidelines
  – US
  – Cross-sectional imaging: CT and MRI
    • LIRADS criteria

• Role for liver biopsy

• Treatment with multidisciplinary team to discuss curative options vs palliative

http://media.gettyimages.com/photos/liver-cancer-gross-specimen-picture-id123776608?s=170667a
https://www.pathology.med.umich.edu/greensonlab/M2liverlecture.html
Curative options for HCC

• Surgical resection

• Liver transplantation

• Radiofrequency ablation

http://sciencenordic.com/liver-transplants-ten-times-better-chemotherapy
Palliative options for HCC management

• Chemoembolization

• Sorafenib (Nexavar)

• Observation/Hospice
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Palliative care and Hospice

Adapted from:
Additional References

- [https://www.aasld.org/sites/default/files/guideline_documents/hepaticencephalopathy82014.pdf](https://www.aasld.org/sites/default/files/guideline_documents/hepaticencephalopathy82014.pdf) AASLD practice guideline for Hepatic Encephalopathy
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4836593/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4836593/) Hyponatremia and Hepatorenal syndrome
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4462717/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4462717/) PVT in Cirrhosis: Controversies and latest developments