Case Study
Complications of Cirrhosis
Program Disclosure

- This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the sponsorship of Purdue University College of Pharmacy and the Chronic Liver Disease Foundation. Purdue University School of Pharmacy is accredited by the ACCME to provide continuing medical education for physicians.

- This program is supported by an educational grant from Salix Pharmaceuticals.
Educational Objective

• Discuss case review of patient with complications of cirrhosis
Case Study

• Profile

- 55 yr old female being evaluated in clinic for new onset ascites and lower extremity edema

- Hospitalized 2 weeks ago for UGI bleed: EGD with grade 1 esophageal varices and a 1cm clean-based antral ulcer

- Pt was on naproxen 220 mg TID for lower back pain for two week prior to hospitalization

- Discharged on omeprazole 20 mg BID

- Review of symptoms shows patient is forgetful, does not sleep well, drowsy and fatigued during day which prevents her from working full-time. No abdominal pain.
Case Study

- Patient History
  - 10 yr history of type 2 diabetes mellitus, hypertension and hypercholesterolemia
  - No angina or coronary heart disease
  - Drank alcohol moderately heavy in 20s. Currently drinks less than 3 drinks/wk
  - Does not smoke
  - Family history is unremarkable
Case Study

- Physical Exam

  | BP -132/82 | Pulse - 88 | Temp - 37.0 C. | Weight 235 lbs. | BMI - 33 |

  - Alert, oriented to person, place, year and month but not to the day
  - Sclerae were not icteric
  - Pulmonary and Cardiovascular exam normal
  - Abdomen distended with fluid wave, mild tenderness to palpation
  - No hepatosplenomegaly
  - 2+ edema to mid-calf / Pedal pulses barely palpable
  - Neurological exam without motor or sensory deficits, (+) asterixis
  - Skin exam with a few spider telangietasias on face and upper chest
After initial evaluation, lab tests were obtained:

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUN</td>
<td>8 mg/dl</td>
</tr>
<tr>
<td>Serum creatinine</td>
<td>1.0 mg/dl</td>
</tr>
<tr>
<td>AST</td>
<td>68 IU/ml</td>
</tr>
<tr>
<td>WBC</td>
<td>4200</td>
</tr>
<tr>
<td>Serum albumin</td>
<td>2.5 gm/dl</td>
</tr>
<tr>
<td>ALT</td>
<td>46 IU/ml</td>
</tr>
<tr>
<td>Platlets</td>
<td>94,000</td>
</tr>
<tr>
<td>Serum sodium</td>
<td>133 mEq/ml</td>
</tr>
<tr>
<td>Alkaline phosphatase</td>
<td>130 IU/ml</td>
</tr>
<tr>
<td>Hct</td>
<td>35.5%</td>
</tr>
<tr>
<td>Serum potassium</td>
<td>3.8 mEq/ml</td>
</tr>
<tr>
<td>Total bilirubin</td>
<td>1.8 mg/dl</td>
</tr>
<tr>
<td>Prothrombin time (INR)</td>
<td>1.5</td>
</tr>
</tbody>
</table>
What is the next best appropriate test?

* Repeat endoscopy for banding?

* Diagnostic paracentesis

* Colonoscopy

* MRI of brain

* Check serum ammonia level
Case Study

- A diagnostic paracentesis was performed; fluid analysis showed:

<table>
<thead>
<tr>
<th>Ascitic fluid protein – 1.3 gm/dl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ascitic fluid albumin – 0.7 gm/dl</td>
</tr>
<tr>
<td>WBC – 1150/mm3</td>
</tr>
<tr>
<td>Polys 75%</td>
</tr>
<tr>
<td>Mononuclear cells - 22%</td>
</tr>
</tbody>
</table>

Calculated serum/ascites albumin gradient (SAAG):

2.5 - 0.7 = 1.8

(High SAAG ascites) consistent with portal hypertension

Spontaneous bacterial peritonitis (neutrophil count >250)
Case Study

- Diuretics are held – given IV albumin (1.5g/kg body weight), ceftriaxone and lactulose.

Case Study

• Rifaximin 550mg bid was added to regimen and lactulose dose adjusted to 30cc po twice daily as patient having more than 5 stools/day.

• Day 5 – Mentation improved. No longer disoriented. Discharged home on the following meds:
  – Rifaximin 550mg po bid
  – Lactulose 30cc once or twice daily as needed to have 2-3 formed stools per day
  – Ciprofloxacin 750mg as a single oral dose/week