Weekly Calendar

1/25: MM&I
1/26: Yellow Team Noon Report
1/27: Grand Rounds: Nicole Brown, MD: “Adult Congenital Heart Disease”
1/28: Weesner Prep: Liquid Tumors with Courtney
AHD: none (change day)
1/29: 12p: Senior Noon Report
1:30p: Intern Wards Orientation (NO Intern noon report, change day)

OLYMPICS ARE COMING...

Draft is next week. No pressure.

Anonymous Feedback

Our website has a section for anonymous feedback. Think of this like an electronic suggestion box that you can use at any time. The message will be sent directly to Dr. Warm, and is completely anonymous. If you have constructive feedback that you would like to share, please use this tool. The link is: http://intmed.uc.edu/education/residency/feedback.aspx
Thanks for everyone’s participation in the first annual liver quiz bowl. Congrats to the Fighting Patricios and Kiss My Asterixis!

### TABLE 1. Medications for Use in Patients With NAFLD

<table>
<thead>
<tr>
<th>Medication</th>
<th>Indications</th>
<th>Contraindications</th>
<th>Limitations</th>
<th>Adverse effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pioglitazone</td>
<td>Primary treatment of biopsy-proven NASH in diabetic and nondiabetic patients; Treatment of diabetes in patients with NAFLD</td>
<td>Symptomatic heart failure</td>
<td>May increase risk of bladder cancer</td>
<td>Weight gain, bone loss, GI upset, fatigue, and lower extremity edema</td>
</tr>
<tr>
<td>Vitamin E</td>
<td>Primary treatment of biopsy-proven NASH in nondiabetic patients</td>
<td>History of prostate cancer and bleeding disorder</td>
<td>May increase all-cause mortality, risk of prostate cancer; Not tested in diabetic patients</td>
<td>Increased risk of bleeding and hemorrhagic stroke</td>
</tr>
<tr>
<td>Metformin</td>
<td>Treatment of diabetes and insulin resistance in patients with NAFLD</td>
<td>Renal failure</td>
<td>Not a primary treatment of NASH</td>
<td>Diarrhea, lactic acidosis, and GI upset</td>
</tr>
<tr>
<td>Obeticholic acid</td>
<td>Primary treatment of biopsy-proven NASH in diabetic and nondiabetic patients</td>
<td>Not currently commercially available</td>
<td>Not FDA approved or available outside of clinical trials; Long-term safety is not known</td>
<td>Pruritus and hypercholesterolemia</td>
</tr>
<tr>
<td>Statin</td>
<td>Treatment of hyperlipidemia in patients with NAFLD</td>
<td>Excessive alcohol use and hypersensitivity to statin class</td>
<td>Not a primary treatment of NASH</td>
<td>Myalgia, GI upset, mild transaminases, rare liver injury, and myopathy</td>
</tr>
</tbody>
</table>

### TABLE 2. Recommended Management of Patients With NAFLD

1. **Recommend lifestyle modification:**
   a. Weight loss of at least 5%-10% of the total body weight
   b. Aerobic exercise 3-5 times/wk
   c. Minimization of alcohol use (no more than 1 drink/d for women or 2 drinks/d for men)

2. **Assess cardiovascular risks using lipid profile, fasting glucose and/or hemoglobin A1c, level, waist circumference, and BMI**

3. **Manage comorbidities, including diabetes, dyslipidemia, hypertension, and cardiovascular disease**

4. **Discontinue medications that may worsen steatosis, including corticosteroids, amiodarone, methotrexate, tamoxifen, estrogens, tetracyclines, and valproic acid**

5. **Obtain baseline liver evaluation, including liver ultrasound, CBC count, liver panel (AST, ALT, bilirubin, and alkaline phosphatase levels), INR, and creatinine level**

6. **Consider referral for liver biopsy if:**
   a. Patient has risk factors for NASH and advanced fibrosis, including diabetes and/or metabolic syndrome
   b. Patient has findings concerning for cirrhosis, such as thrombocytopenia, AST level > ALT level, or hypoalbuminemia
   c. Patient is undergoing cholecystectomy or bariatric surgery and intraoperative biopsy is low risk

7. **Consider pharmacotherapy if patient has biopsy-proven NASH without cirrhosis and no absolute contraindications**

8. **Obtain appropriate screening if patient has known cirrhosis:**
   a. Right upper quadrant ultrasound every 6 mo for HCC screening (refer to AASLD guidelines)
   b. EGD screening for esophageal varices (refer to AASLD guidelines)
   c. Referral to a transplant center when appropriate (refer to AASLD guidelines)

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NAFLD

30-40% of US population

- NAFL
- 15-25%
- NASH
- 30-40%
- Fibrosis
- 15-20%
- Transplant
- Cirrhosis
- Death
- 2-3%/yrs
- HCC

AASLD = American Association of Liver Disease; ALT = alanine aminotransferase; AST = aspartate aminotransferase; BMI = body mass index; CBC = complete blood cell; EGD = esophagogastroduodenoscopy; HCC = hepatocellular carcinoma; INR = international normalized ratio; NAFLD = nonalcoholic fatty liver disease; NASH = nonalcoholic steatohepatitis.

Biopsy should be considered in diabetic patients with other risk factors for advanced fibrosis.
Hypercalcemia

>90% Hypercalcemia cases accounted for by primary hyperparathyroidism (MCC outpatient) and malignancy (MCC hospitalized)

Malignancy:
- humoral hyperCa mediated by PTHrP associated with solid tumors, esp: Lung, head/neck, squamous cell and Renal cell
- Local osteolysis (cytokine mediated) associated with multiple myeloma and breast cancer

<table>
<thead>
<tr>
<th>Effects</th>
<th>PTH</th>
<th>Calcitriol (Active form of Vit D)</th>
<th>Calcitonin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Increases Ca, decreases PO4</td>
<td>Increases Ca, increases PO4</td>
<td>When hyperCa: decreases Ca and PO4</td>
</tr>
<tr>
<td>Bones</td>
<td>Promotes osteoclast resorption</td>
<td>No direct effects</td>
<td>Inhibits osteoclast resorption</td>
</tr>
<tr>
<td>GI Tract</td>
<td>Indirect effects via calcitriol activation</td>
<td>Supports Ca + PO4 Absorption</td>
<td>No direct effects</td>
</tr>
<tr>
<td>Kidneys</td>
<td>Promotes Ca reabsorption, PO4 excretion</td>
<td>No direct effects</td>
<td>Promotes Ca and PO4 excretion</td>
</tr>
</tbody>
</table>

Rx causing hyperCa:
1. Thiazide diuretics (increase renal Ca resorption)
2. Lithium: increases serum Ca set point for triggering CNS negative feedback on PTH secretion
3. Vitamin A Overdose (plus analogs used to treat acne)

Serum Calcium ≥ 10.5 mg/dL

PMID: 19395781

Measured serum calcium concentration corrected for the abnormality in serum albumin concentration:

**Corrected calcium (mg/dL) = 0.8 × [normal albumin (4.5 g/dL) - patient’s albumin (g/dL) + patient’s calcium (mg/dL)]**
Q: 45 y/o man p/w a 2-day h/o fever and abd pain. PMHx: cirrhosis due to chronic hepatitis C, esophageal varices, ascites, and minimal hepatic encephalopathy. Rx = furosemide, spironolactone, nadolol, lactulose, zinc, vitamin A, and vitamin D. PE: AF, 100/50, 84/min, RR 20/min. ABD: distention consistent with ascites, nontender. Abd US: cirrhosis, splenomegaly, and ascites. The portal and hepatic veins are patent, and there is no hydronephrosis. Diagnostic paracentesis: cell count of 2000/µL with 20% neutrophils, a total protein level of 1 g/dL, and an albumin level of 0.7 g/dL; What is the next step?

A: Cefotaxime and albumin. Diagnose SBP with positive ascitic fluid bacterial culture and/or an elevated ascitic fluid absolute PMN cell count ≥ 250 without evidence of secondary causes of peritonitis. Patients with negative cultures have the same clinical presentation and outcomes compared with those with positive cultures. IV cefotaxime (or 3G cephalosporin) is the TOC for SBP. Kidney failure associated with SBP increases the risk for mortality. The use of cefotaxime plus intravenous albumin at 1.5 g/kg on admission and 1 g/kg on day 3 has been shown to decrease in-hospital mortality by 20% in patients with serum creatinine values of 1.5 mg/dL or greater. Patients with advanced liver disease (total bilirubin of 4 mg/dL or greater) also benefit from intravenous albumin to prevent kidney failure associated with SBP.

PMID: 19475696
Weekend to-do!


TRIVIA

Why is the North American buffalo so easy to kill with a single arrow?

First correct answer to Stephen wins a $5 Copper Moon gift card!

Congrats to Vaz O’Neal for correctly identifying 7-up, which contained Lithium until 1950 and was originally called “Lithiated lemon soda”.

SHOUT OUTS!!!

-to Erin Connolly who had 5 GI admissions while on long call (5-7) and handled them like a boss.

-to our AOD Perry Lin who was helping out and carried the GI senior pager, supervised the admissions and procedures

-to Jeremy Sorkin who is rocking out VA nightfloat

-to Steve Gannon for rapidly assessing and triaging to the MICU a complicated sick patient who showed up in the CSD.

-to Steve Cogorno for not even hesitating to pick up a month of our inpatient needs to fill the schedule gaps.