

HBV ECHO Case Recommendations



Session 15: December 5, 2022

Case Recommendations and Considerations: Follow up case of a 69 y/o Korean woman, with biliary stricture and is s/p liver transplant complicated by duodenal perforation and subsequent gastrojejunostomy who was presented initial for pruritis and mental health changes. In the interim, medication changes were made and she was hospitalized with COVID-19. Pruritis has improved.

CATEGORY	RECOMMENDATIONS	Relevant Presentation Question or Concern	REFERENCES/ RESOURCE LINKS
History	<ul style="list-style-type: none"> • 		
Physical Exam	<ul style="list-style-type: none"> • 		
Diagnostic evaluation	<p>1. The AFP seems be fluctuating, but not clearly trending upwards. Because the patient has been undergoing regular surveillance imaging without evidence of recurrent malignancy, we can be reassured.</p> <p>AFP can be a potential marker of primary malignancy such as HCC or a marker of ongoing hepatic inflammation. There can be many explanations of hepatic inflammation depending on the clinical context, including liver transplant recipients on immunosuppressive medications to prevent organ rejection. Certainly, in patients with underlying hepatitis B we are worried about the possibility of developing HCC, and therefore routine surveillance imaging every 6 months is recommended. However, the elevation in AFP in this case is more likely to be related to ongoing hepatic inflammation. Also keep in mind that laboratory tests can have some degree of variation. A large sudden increase in the AFP can be quite concerning and would prompt further diagnostic workup, but this, too is not something observed in this case.</p>	<p>1. Should there be concern about up trending AFP in this liver transplant recipient?</p>	

HBV ECHO Case Recommendations



	<p>2. AFP is not routinely measured for the purpose of adjusting dosages of immunosuppression or determining if immunosuppression is adequate. Typically, we would look at the LFTs and results of imaging to make such decisions.</p> <p>3. FK506 refers to the serum levels of Tacrolimus</p>	<p>2. Can the AFP levels reflect the effectiveness of her anti-rejection regimen, and is this something we monitor when considering dose adjustments of immunosuppression?</p> <p>3. What is the lab test "FK506"?</p>	
<p>Medication Therapy & Adjustments</p>	<p>1. The serial ALT measurements are stable, although higher than what we would determine to be normal (20-30 IU/L). The labs suggest there may be some ongoing mild hepatic inflammation which would support the theory that this is the cause of her AFP elevation. The total bilirubin is normal which is reassuring.</p> <p>2. It is interesting she is on ursodiol because mechanical biliary obstruction is a relative contraindication to ursodiol (patient has a biliary stricture) and can actually increase serum bilirubin if there is mechanical obstruction. This is already known to the transplant team and she has been on ursodiol chronically without complications at this point.</p>	<p>1. The patient was off Myfortic (mycophenolate) for the duration of the period presented in the case. Is the fact that she was off of one of her immunosuppressive drugs reflected in the lab values presented?</p> <p>2. A note on ursodiol use in this patient</p>	
<p>Vaccination</p>	<ul style="list-style-type: none"> • 		
<p>Social Determinants</p>	<ul style="list-style-type: none"> • 		

HBV ECHO Case Recommendations



of Health (SDOH)			
Behavioral Health	•		
Screening	•		
Risk Reduction	<ol style="list-style-type: none"> 1. The recommended frequency and duration of physical therapy after hospitalization is often inadequate for a recovery to baseline. One or two hours, three times per week is not likely enough physical therapy for an elderly deconditioned patient to return to baseline. 2. Daily activity is recommended. Regular exercise at least four times per week (that is, more days than not) should be the goal. 3. Resistance strength training with repetitions to the point of fatigue is usually needed to rebuild muscular strength. This is followed by a day of rest for the particular “stressed” muscle groups. 	<ol style="list-style-type: none"> 1. A comment on elderly patients participating in post-hospitalization physical therapy. The patient has leg weakness due to deconditioning 	
Other	<ol style="list-style-type: none"> 1. Our hub experts suggested there are no special diets that have a significant effect on bile acid production, however, see reference on vegan diet. A low-fat diet may be recommended in other disorders such as bile acid malabsorption which causes diarrhea due to inability to digest fat. This usually does not have an effect on the serum bilirubin. Specifically, in liver transplant patients, dietary considerations are often made with respect to concerns about absorption of immunosuppressive medication 2. See the answer provided above 	<ol style="list-style-type: none"> 1. Are there any dietary recommendations to reduce the amount of bile acids produced? 2. Are fatty foods associated with a higher production of bile acid since bile acids are 	<p>Trefflich I, Marschall HU, Giuseppe RD, Stählman M, Michalsen A, Lampen A, Abraham K, Weikert C. Associations between Dietary Patterns and Bile Acids-Results from a Cross-Sectional Study in Vegans and Omnivores. <i>Nutrients</i>. 2019 Dec 23;12(1):47. doi: 10.3390/nu1201004</p>

HBV ECHO Case Recommendations



	<p>3. The liver is an “immune privileged” organ due to its responsibility in processing foreign substances and toxins, and therefore is under less aggressive immune regulation by the body. In turn, liver transplant recipients require lower degrees of immunosuppression relative to recipients of other solid organs such as heart, lung, or kidney. As a consequence, they are also less likely to develop drug toxicities and side effects of immunosuppression.</p> <p>4. Cholestasis refers to slowing of bile duct flow caused by bile duct or hepatocellular dysfunction, whereas cholesterol is a product of lipid metabolism. However, cholesterol is used in the synthesis of bile acids. Elevated cholesterol levels can be seen in other cholestatic disease such as Primary biliary cholangitis. See the image below taken from <i>Costanzo Physiology Sixth edition page 372</i></p>	<p>required for the digestion of fatty foods?</p> <p>3. A note on immunosuppression in liver transplant recipients vs recipients of other solid organs</p> <p>4. Is there a connection between cholestasis and cholesterol?</p>	<p>7. PMID: 31878000; PMCID: PMC7019893.</p>
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PLEASE NOTE that case consultations and recommendations for the HBV ECHO do not create or otherwise establish a provider-patient relationship between any participant, Hawaii Learning Groups, and/or any other clinician on the HBV ECHO faculty.

HBV ECHO Case Recommendations

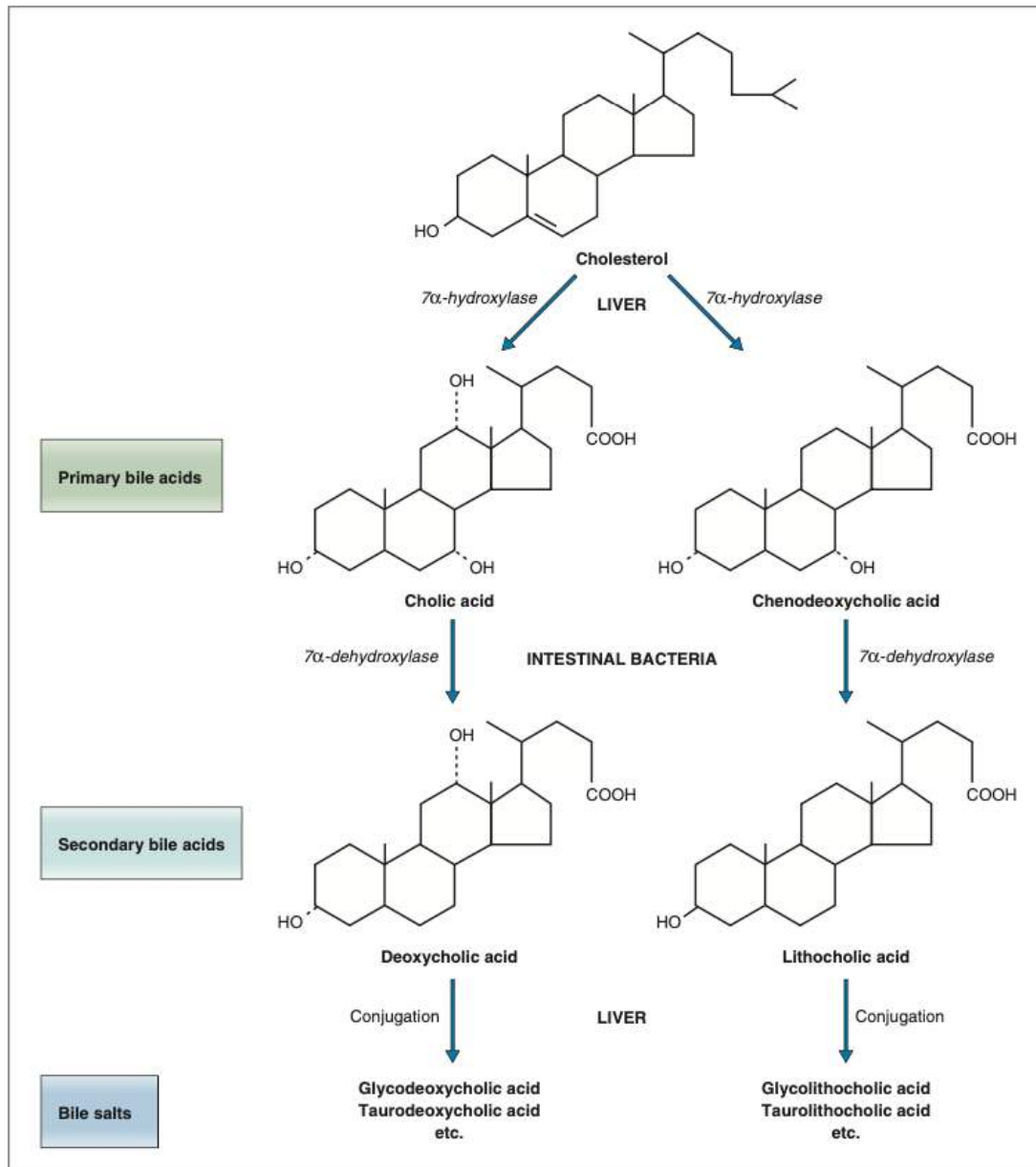


Fig. 8.25 Biosynthetic pathways for bile acids. The liver conjugates primary and secondary bile acids with glycine or taurine to their respective bile salts. The resulting bile salt is named for the bile acid and the conjugating amino acid (e.g., glycodeoxycholic acid is deoxycholic acid conjugated with glycine).