Rare Presentation of Babesiosis Induced Liver Failure and Hemolytic Anemia Presenting as Conjugated (Direct) Hyperbilirubinemia

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Introduction

- Patients with cirrhosis and history of decompensations may present with hemolytic anemia with non-conventional hyperbilirubinemia patterns.
- It is important to be thorough with social/work/exposure history if patients present with repeated cirrhotic decompensations.
- In the setting of acute anemia, it is worth evaluating for hemolysis if tick or parasite exposure is suspected, even in setting of mainly conjugated hyperbilirubinemia.

Clinical Course

- Patient presented with elevated total bilirubin of 10.8 mg/dL, of which conjugated (direct) serum bilirubin was 8.3 mg/dL and MELD 3.0 score of 29, Maddrey score of 89.4.
- Patient underwent paracentesis for symptomatic ascites with 3.5L of transudative fluid drained, without evidence of SBP.
- Patient was treated with IV steroids for alcoholic hepatitis, however clinical status did not improve despite 7 days of steroid therapy. With other causes of hepatitis ruled out and lack of improvement on IV steroids, patient was considered for a liver transplant.
- Serum bilirubin levels continued to rise, with peak total bilirubin level at 17.9 mg/dL - being mostly conjugated bilirubin at 13.3 mg/dL.
- Tick-borne infectious workup was ordered which revealed blood smear with 2% parasite load, which turned out to be Babesia Microti with high IgM titer of 1:20 (consistent with acute infection), and IgG titer of 1: 320. Babesia DNA PCR was also positive.
- Hemolysis labs showed elevated LDH of 1,217 unit/L, reticulocyte count of 7.6%, blood smear positive for Schistocytes, and anemia with Hb of 8 g/dL. Given the bilirubinemia was mainly conjugated (direct) hyperbilirubinemia, it did not fit a typical hemolysis picture.
- Patient was started on antimicrobial therapy with atovaquone, azithromycin and doxycycline and transferred to a tertiary care center capable of a transfusion exchange or a liver transplant. Total bilirubin levels decreased with antimicrobial treatments and monitoring.
- On a one month follow-up, patient was much improved with serum total bilirubin at 5 mg/dL and conjugated bilirubin around 4 mg/dL. Patient was still on his course of antimicrobial therapy.

Discussion

With an active Babesiosis infection causing hemolytic anemia, we would normally expect elevated total serum bilirubin levels, with a predominance of unconjugated (indirect) bilirubin. However, with patients with existing liver disease, cirrhosis and/or splenomegaly, this may not be the case due to hypothesized biliary sludge. Such individuals may have predominantly conjugated hyperbilirubinemia. A focused workup using other indices for hemolysis and parasitemia may be necessary to rule out hemolytic anemia and tick-borne illnesses in individuals with pre-existing liver disease.

Patient Presentation

49 year old male farmer with a history of alcohol-induced cirrhosis with repeated decompensations requiring therapeutic paracenteses presented with acute decompensated cirrhosis with ascites, acute liver failure, acute rising total bilirubin, altered mental status and fevers.

References

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Conclusion

Individuals with pre-existing liver disease and with tick-borne illnesses may develop hemolytic anemia with an atypical pattern of hyperbilirubinemia. We should remain mindful of this and exclude hemolysis by assessing additional markers, including a blood smear and reticulocyte count.