

Drug-Induced Liver Injury in a Patient with Ulcerative Colitis: A Case Report

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PURPOSE

To review presentation, diagnosis, and workup for rare but known sulfonamide-associated DILI in a patient with multiple risk factors

INTRODUCTION

Drug-induced liver injury (DILI) is a rare though known adverse drug reaction that can progress to hepatic failure. Though the mechanism is unclear, several classes of medications have been clearly associated with DILI. Sulfonamide drugs, a potent class of drugs with diverse applications, is associated with DILI. It is believed that sulfonamides cause hepatotoxicity in < 1% of treated patients. A diagnosis of exclusion, DILI requires thorough workup to rule out possible etiologies for acute and fulminant liver failure.

CASE DESCRIPTION

A 32-year-old male with ulcerative colitis presented with acute hepatitis of unknown etiology. Patient's liver enzymes were elevated to 1000s u/L with associated symptoms such as scleral icterus, jaundice, and hepatomegaly. Other symptoms included fever, fatigue, vomiting, and dark urine.

Patient only had history significant for ulcerative colitis. Medications included a recently completed prednisone taper and a change from balsalazide to sulfasalazine due to drug rash. Patient had prior history of urticaria on mesalamine; recently traveled to Colorado where he ate sushi and had been to Bolivia prior to that. Patient drank 2-3 beers every other day but denied other drug use, with possible exposure to fleas and ticks during home renovation.

Sulfasalazine immediately discontinued, however liver enzymes continued to increase by the 1000s. Empiric Zosyn started. Extensive infectious, autoimmune, metabolic, and genetic workup largely unremarkable. Transfer of care for liver transplant was initiated in addition to continuation of supportive care.

HOSPITAL COURSE

Summary of Hepatitis Workup		
Differential	Relevant Clinical Information	Workup
Viral Hepatitis	Hepatocellular pattern of liver inflammation, rapid progression	HAV, HBV, HCV, HDV, EBV, CMV, HSV, VZV, and HIV
Drug Induced Hepatitis	- ALT>AST - Recent outpatient medication change to Sulfasalazine	EtOH and Acetaminophen levels
Budd Chiari Syndrome		US Abdomen for thrombi
Primary Sclerosing Cholangitis	History of Ulcerative Colitis	US Abdomen for biliary dilation/strictures
Tick-borne diseases	Exposure to fleas/ticks: basement renovation and family dog. (Started empiric Doxycycline and Piperacillin-Tazobactam)	Bartonella, Ehrlichia Chaffeensis, Borrelia Burgdorferi, Coxiella Burnetii, Spotted Fever Group Rickettsia, and Murine Typhus
Parasites	Sushi ingestion International travel No recent hiking	Stool Ova & Parasites, Blood smear, Malaria, Strongyloides
Contact with infected foods/etc...		Brucella, Coxiella, Leptospira
Fungal exposure	Basement renovation Endemic location	Coccidioidomycosis, Cryptococcus
Hemophagocytic Lymphohistiocytosis	1 episode of fever, splenomegaly, elevated ferritin >500ng/ml	NK cell activity, IL-2-R, Fibrinogen, Hgb, ANC, Bone marrow biopsy.
Additional etiologies included: Tuberculosis, Syphilis, Malignancy, Autoimmune hepatitis, Anti-1-Antitrypsin deficiency, Celiac disease, Wilson's disease, Hemochromatosis		

Figure 1: Trend of Liver Inflammation Markers

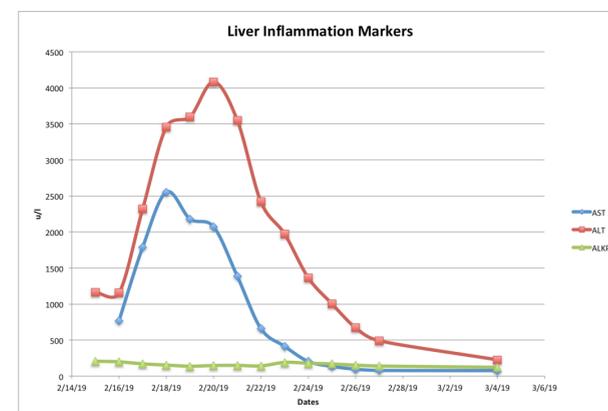
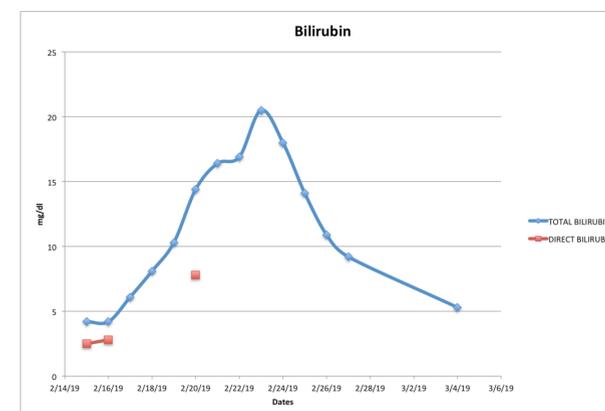


Figure 2: Trend of Bilirubin



CASE DESCRIPTION (CONTINUED)

With sufficient time, the patient's liver inflammation markers began to stabilize. His symptoms improved for the remainder of admission on supportive care and discharged home with close follow-up. Liver inflammation persisted for weeks upon follow-up, with initial consideration for liver transplant. However, acute liver failure did not develop and his liver recovered without further intervention.

DISCUSSION & CONCLUSION

Sulfasalazine is implicated as causing drug-induced liver injury (DILI) given the the patient's improvement after the offending medication was discontinued. Overall, there are hundreds of known hepatotoxic medications, including acetaminophen, amoxicillin/clavulanate, isoniazid, phenytoin, valproate, amiodarone, azathioprine, and sulfasalazine. As a sulfonamide, sulfasalazine is hypothesized to damage the liver by drug allergy, hypersensitivity, or toxic/reactive/antigenic metabolites. Liver injury can range from self-limited hepatitis (as in this case) to DRESS to acute liver failure.

In this case, the liver biopsy showed acute liver inflammation with granulomas from preexisting liver inflammation, possibly from prior sulfonamides vs. chronic alcohol use. This may have predisposed the patient to DILI from sulfasalazine. Documenting this case of drug-induced hepatitis helps add to the body of literature regarding sulfasalazine's side effects.

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