Ashwagandha Toxicity: A Rare Case of Drug Induced Liver Injury (DILI)

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Subjective

- A previously healthy 36-year-old male with no medical history presented to our institution with 1 week of fatigue, jaundice, nausea and subjective fevers. Denied recent travel, sick contacts
- Medications list was notable for cetirizine, diphenhydramine (both taken as needed), OTC testosterone supplements, OTC apple cider vinegar gummies BID and OTC ashwagandha gummies BID.
- He had no family history of liver disease
- Social history revealed he smoked tobacco, but did not use recreational drug or alcohol and he worked as a plumber

Objective

BP 131/72, Pulse 63, Temp 36.9 °C, Resp 16, BMI 22
Exam was notable for jaundice and conjunctival icterus without other stigmata of liver disease. No hepatomegaly or splenomegaly palpable on exam

Workup/ Course

- Initial chemistries showed an AST 1482 U/L, ALT 1375 U/L, Tbili 22.3 mg/dL, ALP 202 U/L and an INR of 1.6.
- All home medications and supplements were held

Workup/ Course

- Ultrasound of the liver with doppler showed normal velocities without any morphologic changes to the liver
- Evaluation for APAP toxicity, HH, Wilson's, A1AT, AI hepatitis and viral hepatitis was negative
- Trans-jugular liver biopsy revealed evidence of acute portal and lobular hepatitis and cholestasis, suggestive of DILI.
- Patient's liver enzymes continued to downtrend (AST 929, ALT 765, Tbili 22.5) after withdrawal of his supplements and was discharged
- Patient was scheduled for outpatient follow up with hepatology but was lost to follow up.

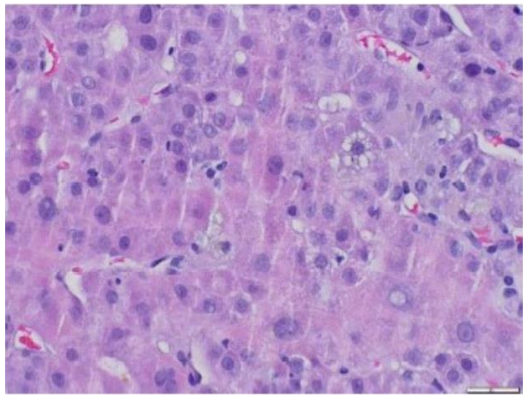

Figure 1: Mixed Portal Inflammation with Bile Ductular Proliferation

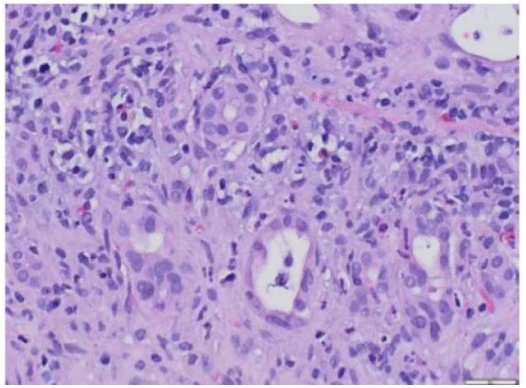

Figure 2: Cholestasis with Feathery Degeneration

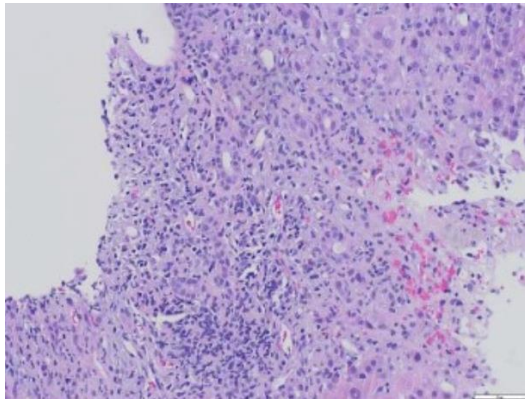

Figure 3: Portal inflammation (low power)

Discussion

- Ashwagandha causing DILI has been infrequently reported in literature.
- Its cited uses include anxiety, to improve memory, and increasing general vitality and well being
- One case series of 5 patients in Iceland and a single case in Japan reported ashwagandha is an uncommon culprit linked to acute liver injury.
- None of the reported cases necessitated liver transplant.
- Average time to resolution and normalization of LFTs was 3.5 months and R values usually ranged in the mixed range (R value 2-5). The case series also revealed that ashwagandha's toxicity could be dose dependent, as higher peaks in LFT's were tied to recent increases in ashwagandha dosing.

Take Home Points

- As with all DILI, a careful history should be taken when patient
- Ashwagandha is infrequently reported, but most cases cause a hepatocelullar pattern of injury
- Transplant has not be needed in all reported cases