

Turmeric Associated Liver Injury - The Yellow in Your Food Causing the Yellow in Your Skin

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TAKEAWAY: PIPERINE IN TURMERIC SUPPLEMENTS MAY CAUSE ACUTE LIVER INJURY THAT SELF RESOLVES WITH CESSATION OF DRUG

Introduction:

- Turmeric is a herbal medication used for its flavor, color, and purported antiinflammatory, antioxidant, antineoplastic, and antimicrobial properties.
- Turmeric supplements are generally self-medicated and patients can avail of them over the counter or through online portals.
- Turmeric typically has low bioavailability orally and is hence sometimes enhanced with nanoparticle delivery methods or piperine (black pepper) to increase absorption.
- Studies have linked these formulations to a higher incidence of hepatotoxicity.



Diagnosis:

- Labs: Alanine transaminase (ALT) of 2143U/L, aspartate transaminase (AST) of 2025U/L, alkaline phosphatase (ALP) of 590U/L, total bilirubin 8.1mg/dL, direct bilirubin 6mg/dL, and INR of 1.2. An extensive workup including hepatitis viruses, cytomegalovirus, smooth muscle antibody, and ceruloplasmin was sent which were all negative
- Imaging: Ultrasound of the abdomen was normal

Management:

- She was given 19,200mg of NAC over 24 hours and all her medications were held. Over the course of the next five days her ALT came down to 1,730U/L and her AST came down to 1,517U/L without any additional therapy and she was asymptomatic

Discussion:

- She was discharged with close outpatient monitoring and her liver function tests normalized over two months.
- What makes our case unique is the use of NAC and quick discharge. There are few studies that have explored the role of NAC in the management of acute liver failure for non-acetaminophen-induced causes. The data is mixed with one Cochrane analysis showing no benefit in terms of death and need for a liver transplant. Another study shows that there may be a survival benefit in terms of post-transplant survival, transplant-free survival, and overall survival while decreasing the overall length of hospital stay.
- Through our case report, we hope to encourage clinicians to keep this etiology in mind when diagnosing acute liver enzyme elevations.

References:

- [1] Turmeric. In: LiverTox: Clinical and Research Information on Drug-Induced Liver Injury [Internet]. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases; 2012 [cited 2022 May 9].
- [2] N-acetylcysteine for acute liver failure not caused by paracetamol overdose [Internet]. [cited 2022 May 12].
- [3] Walayat S, Shoaib H, Asghar M, Kim M, Dhillon S. Role of N-acetylcysteine in non-acetaminophen-related acute liver failure: an updated meta-analysis and systematic review. Ann Gastroenterol. 2021;34(2):235–40.
- [4] Luber RP, Rentsch C, Lontos S, Pope JD, Aung AK, Schneider HG, et al. Turmeric Induced Liver Injury: A Report of Two Cases. Case Reports in Hepatology. 2019 Apr 28;2019:e6741213.