

# SKIN AS YELLOW AS TURMERIC: A CASE REPORT ON TURMERIC-INDUCED LIVER INJURY

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## Background

Turmeric has been used for centuries, in food and as a medical remedy. It generally has a good safety profile, however over-the-counter and online available turmeric herbal and dietary supplement (HDS) have been recently implicated in Drug Induced Acute Liver Injury (DILI).

## Case Presentation

A 63 year old woman was admitted for worsening jaundice for two weeks. On admission total bilirubin was 20.9mg/dL, direct bilirubin 12.1mg/dl, AST 1987 IU/L, ALT 2075 IU/L, Alkaline phosphatase (ALKP) 285 IU/L, INR 0.96, normal albumin and platelets levels. Meld-Na score was calculated to be 24. Ultrasound of liver and CT scan of abdomen did not show any hepatic or biliary abnormality. Viral hepatitis serology was negative.

Auto-immune hepatitis was ruled out with negative anti-nuclear antibody (ANA), anti-smooth muscle (ASM) and anti-mitochondrial antibodies and there was no hypergammaglobulinemia. Patient denied drinking alcohol or using any other medication. She reported consuming daily Turmeric dietary supplements 6 weeks ago. Liver biopsy revealed minimal portal chronic inflammation, but no lobular inflammation/necrosis, fibrosis or plasma cell infiltration- suggesting in favor of drug induced liver injury and against autoimmune hepatitis (AIH). Turmeric was discontinued and liver enzymes gradually trended down in next few weeks.

## Discussion

Turmeric has been used for centuries in food and recently is available over-the-counter and online as herbal dietary supplements (HDS). It is also used as herbal remedy for arthritis, digestive diseases etcetera for its anti-inflammatory and anti-oxidant properties

It is hypothesized that Turmeric supplements available online often contain piperine or nanoparticle delivery methods that increase its bioavailability resulting in DILI. It can occur from few weeks to months after initiation of drug. Some patient may develop drug induced autoimmune hepatitis (DI-AIH) with positive autoantibodies, however in this patient negative autoantibodies, imaging studies and liver biopsy, ruled out all other possible causes of liver injury. Roussel-Uclaf Causality Assessment Method (RUCAM) score can be used for causality assessment in DILI. RUCAM score was 9 in this case which means 'high probability' that Turmeric was the cause of DILI.