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Abstract

Kratom is an herbal supplement derived from the *Mitragyna speciosa* tree leaves in SE Asia and is popular for its psychotropic and opioid-like activity. It is associated with acute liver injury and in rare cases, acute liver failure. Kratom is banned in only 6 states, regulated in 8, and completely unregulated in the rest (Figure 1).

Introduction

Drug-induced liver injury (DILI) and drug-induced liver failure due to alternative medicine supplements have become the second most common cause of DILI (1).

We summarize and analyze the 52 human cases of Kratom-induced hepatotoxicity that have been reported to help better understand its effects.

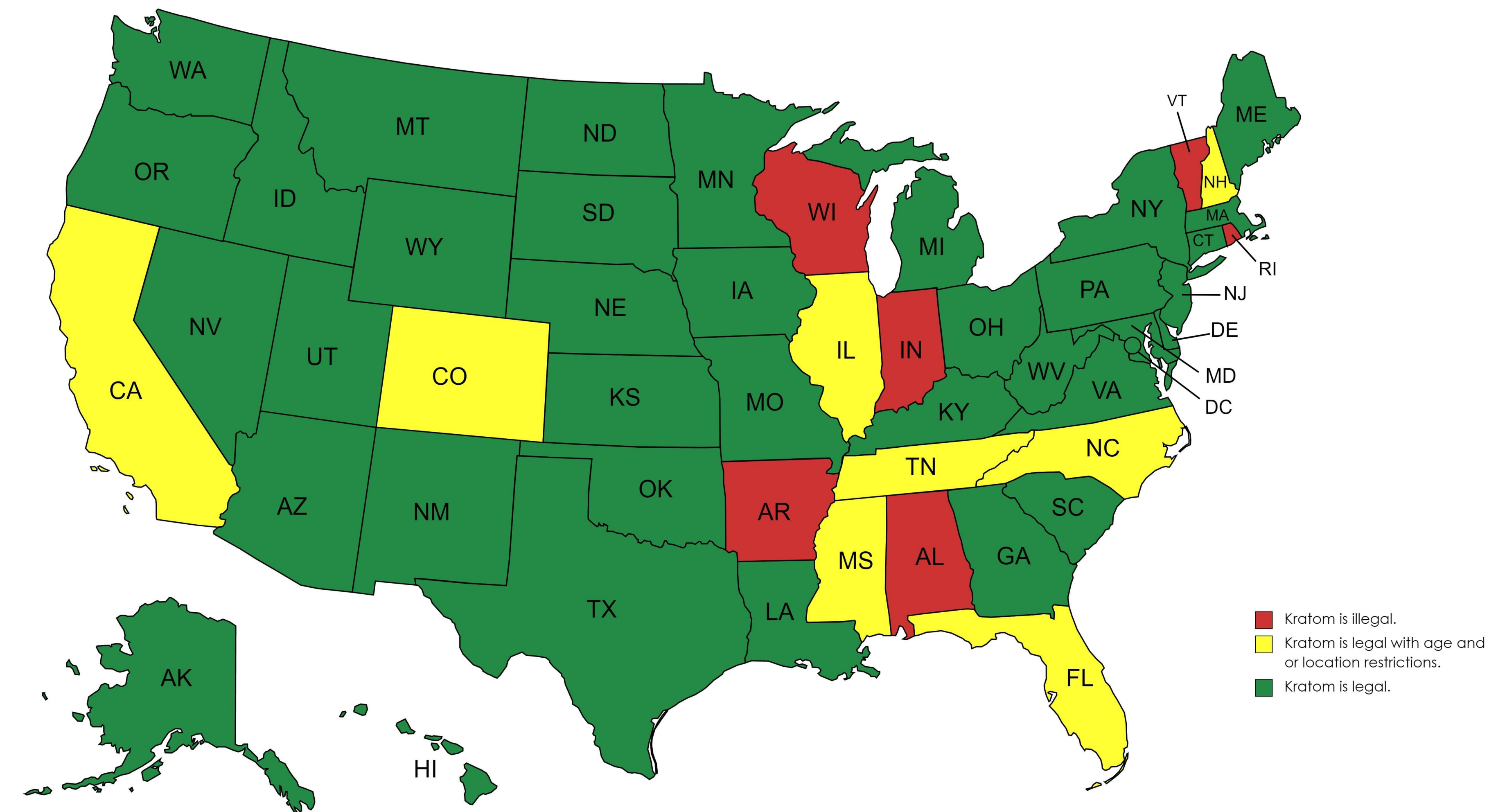
Case Presentation

A 47-year-old male with no significant medical history presented to the emergency department complaining of jaundice for the past 5 days and unintentional 15-lbs weight loss in the past month.

- The patient reported for 3 weeks of Kratom ingestion for neuropathy and hip pain.
- The lab results significant for cholestatic injury with an R-ratio of 1.8.
- The CT and MRI of the abdomen and pelvis showed normal liver with an incidental finding of a complex cystic mass in the pancreatic tail (Figure 2).

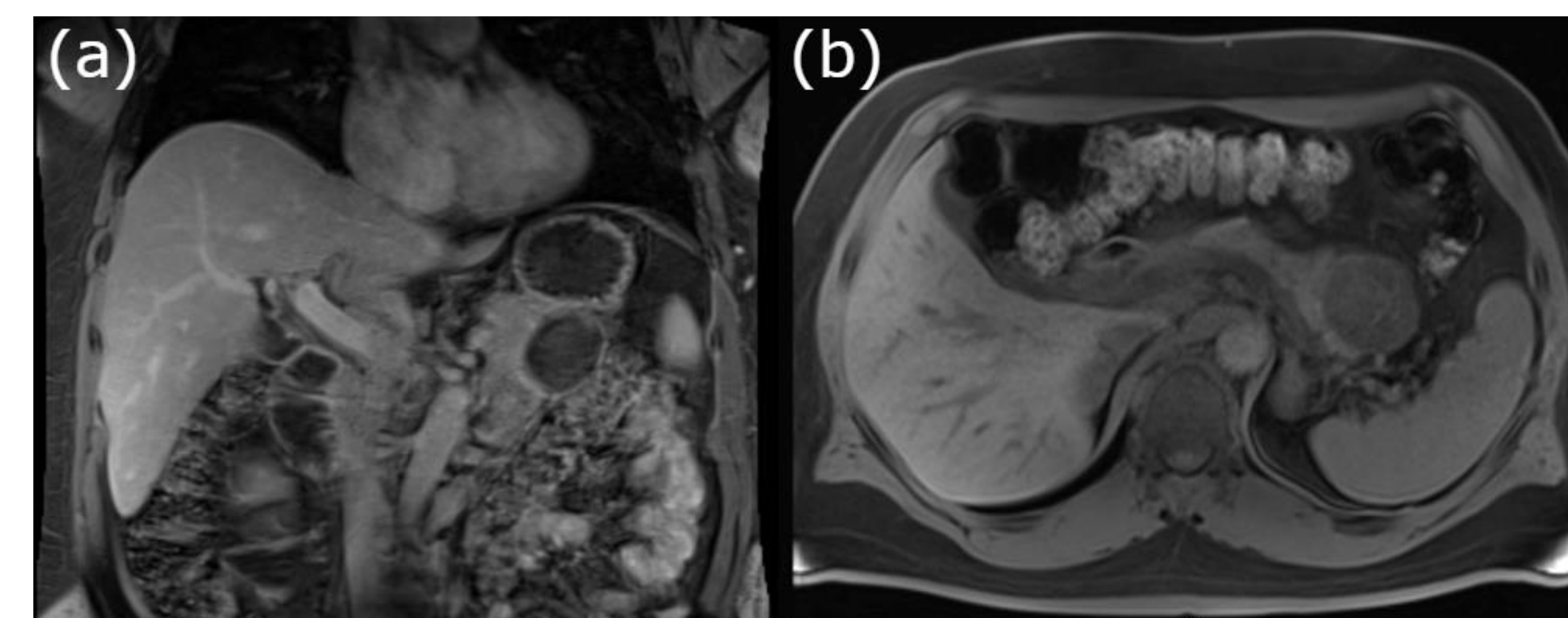
The patient's liver function continued to improve. Since discharge, the patient reports resolution of all of his symptoms since stopping Kratom.

Figure 1. A map of the United States and locations of Kratom restrictions as of 2022.



California: Kratom is legal, except in San Diego and Oceanside; Colorado: Kratom is legal, except in the towns of Monument and Parker; Florida: Kratom is legal, except in Sarasota county; Illinois: Kratom is legal for adults 18 years and older, except in Jerseyville and Alton; Mississippi: Kratom is legal, except in several counties; New Hampshire: Kratom is legal, except in Franklin city; North Carolina: Kratom is legal for adults 18 years and older; Tennessee: Kratom is legal for adults 21 and older.

Figure 2. Magnetic resonance imaging (MRI) with and without contrast of abdomen and pelvis. (a) Coronal view. (b) Axial view.



Discussion

A literature review for human cases in PubMed, Cochrane, and Embase was performed.

- 52 cases were found that contained laboratory values to help distinguish between hepatocellular, cholestatic, or mixed patterns of DILI using the R-ratio.
- Males were predominant (64%)
- Majority had a cholestatic liver injury pattern (80%).
- 5.7% (3 out of 52) of these cases resulted in liver transplants.
- 9.6% (5 out of 52) of these cases experienced acute renal injury with 60% of them needing hemodialysis.
- Rare cases of rhabdomyolysis (3.8%), reversible heart failure (3.8%), acute cholecystitis (3.8%), and undifferentiated shock (1.9%) were reported.
- The rhabdomyolysis tended to always be accompanied by reversible heart failure.
- There was one case that reported salmonella-contaminated Kratom ingestion.

Contact

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References

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