OTC Liver Madness: A Rare Case of Famotidine Induced Liver Injury

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Background

- Drug induced liver injury (DILI) is a common etiology of hepatic injury worldwide, typically due to acetaminophen toxicity
- DILI is rarely seen with histamine H-2 receptor antagonists (H2 blockers)--usually ranitidine or cimetidine
- Famotidine (Fig 1) has been implicated in less than 5 reported cases
- Here we present a very rare case of famotidine induced liver injury

Case Presentation

- An 82-year-old white female with a history of intraductal papillary mucinous neoplasm previously resected with Whipple procedure, and sick sinus syndrome with non-MRI compatible pacemaker presented with epigastric pain and oral intolerance
- Her ranitidine had been switched to famotidine 6 months prior due to a recall. Had course of amoxicillin/clavulanate 4 months prior
- Her labs were notable for total bilirubin 4 mg/dL, direct bilirubin 3.1 mg/dL, ALT 126 U/L, AST 121 U/L, ALP 766 U/L, and CRP of 4.4 mg/dL. Lipase was normal
- Famotidine was switched to cimetidine due to non-availability
- Normal hepatic US. Anti-smooth muscle Ab positive along with anti-EBV-IgM Ab and ANA
- Treatment for autoimmune hepatitis withheld due to improvement, patient discharged on home medications
- On outpatient follow up symptoms recurred prompting liver biopsy, showing centrilobular cholestasis (Fig 2) favoring DILI. Famotidine discontinued and improvement noted

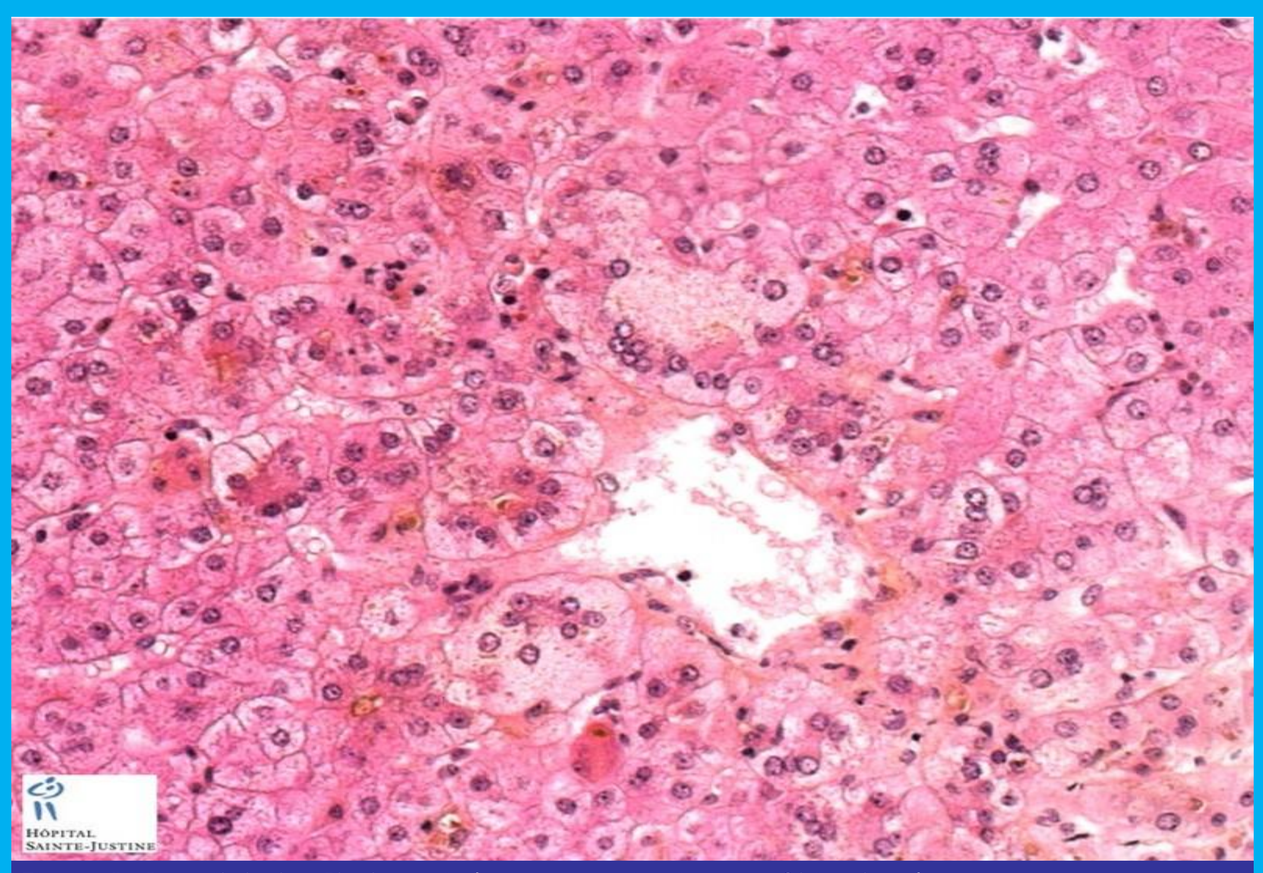

Figure 2. Centrilobular Cholestasis (representative image of histology)

Discussion

- DILI from H2 blockers has been reported to occur between 2 days to 7 months of medication initiation
- Toxicity may stem from inhibition of the cytochrome P-450 system
- Present with abdominal discomfort, fatigue and jaundice with labs showing a cholestatic liver injury pattern.
- Hallmark of DILI is that liver enzymes improve with the discontinuation of the offending agent
- Amoxicillin/clavulanate is not the cause of DILI in this case, since liver enzymes only improved after famotidine discontinuation
- No cross reactivity has been described between H2 blockers, which may explain our patient's improvement while receiving cimetidine
- Case highlights the rare potential danger posed by a commonly used over the counter medication

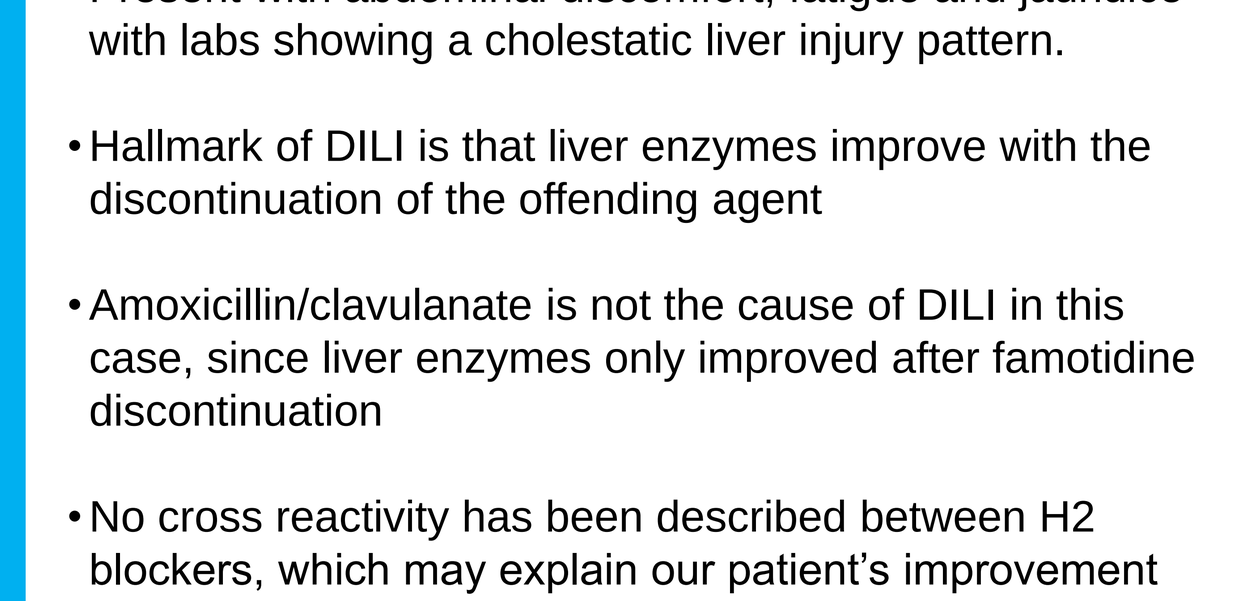

Figure 1. Famotidine Molecular Structure

References

- Hashimoto, F. (1994). Hepatitis following treatments with famotidine and then cimetidine. The Annals of Pharmacotherapy, (28), 37-39.
- Ament, P. (1994). Famotidine-Induced mixed hepatocellular jaundice. The Annals of Pharmacotherapy, (28), 41-42.
- Gupta, N. (2009). Hepatitis following famotidine: a case report. Cases Journal, 2(89) 1-3.
- https://www.humpath.com/spip.php?article4340 (Fig 2)
- https://www.acs.org/content/acs/en/molecule-of-the-week/archive/f/famotidine.html (Fig 1)

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