# Newfound Glow: The First Reported Case of Drug-induced Liver Injury due to Tofacitinib

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## Introduction

Tofacitinib, a Janus kinase inhibitor, is used to treat autoinflammatory conditions, such as ulcerative colitis.

We report the first clinically apparent case of drug-induced liver injury (DILI) related to tofacitinib.

## Case Presentation

A 29-year-old man with ulcerative colitis developed jaundice, malaise, anorexia, and pruritis six months after starting tofacitinib. His only other medication was lisinopril for HTN.

Liver chemistries demonstrated peaked values of AST 826 IU/L, ALT 1427 IU/L, ALP 182 IU/L, T-Bili 6.5 mg/dL.

Tofacitinib was stopped and his symptoms improved. After two months he resumed taking the medication. However, his symptoms recurred four months later.

A liver biopsy revealed acute hepatitis with diffuse severe hepatocanalicular cholestatsis, inflammation, and necrosis, consistent with DILI.

**Tofacitinib-induced liver injury has not been previously reported, and this case emphasizes the need for monitoring liver enzymes when starting tofacitinib.**

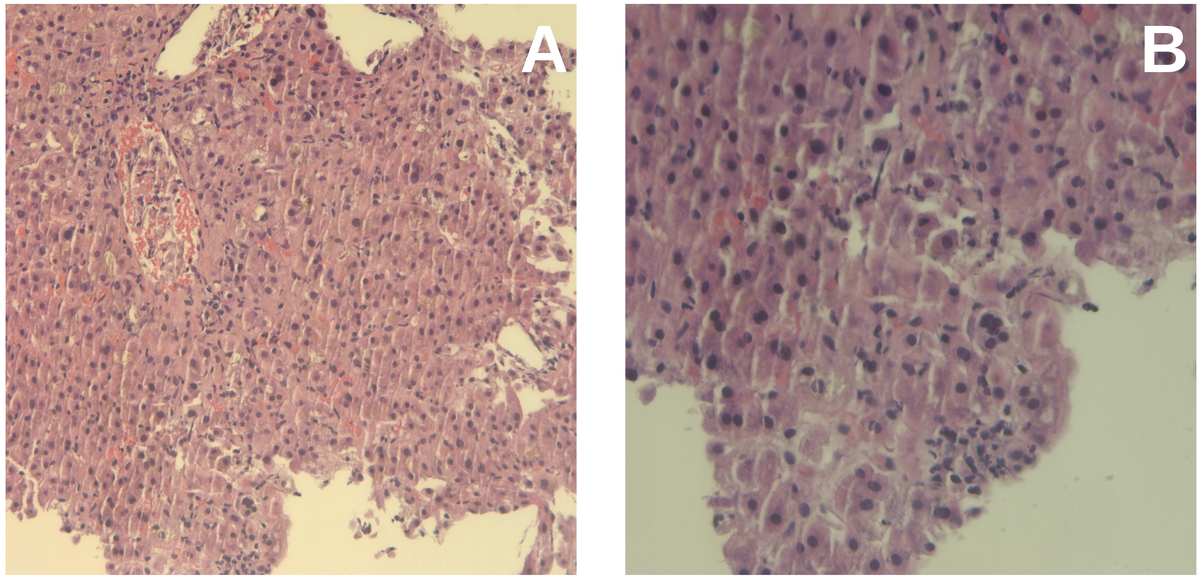


Figure 1. (A) Liver biopsy with acute hepatitis, severe hepatocanalicular cholestasis, inflammation, and necrosis, as well as a multinucleated hepatocyte, consistent with drug-induced liver injury in the setting of tofacitinib use. (B) A high-power resolution image drawing focus on the multinucleated hepatocyte.

## Discussion

- The DILIN prospective study reported no cases of DILI related to tofacitinib between 2004 and 2013.
- The patient developed liver injury with jaundice six months after initiating tofacitinib for ulcerative colitis.
- Biopsy results were consistent with DILI, and he was on no other culprit medications.
- He was rechallenged with tofacitinib and redeveloped liver injury, strongly supporting tofacitinib-induced DILI.
- The mechanism of liver injury is not fully understood but might be attributed to tofacitinib metabolism via CYP3A4.

## References

Magrì, S., Chessa, L., Demurtas, M., Cabras, F., & Mocci, G. (2021). Review article: safety of new biologic agents for inflammatory bowel disease in the liver. *European Journal of Gastroenterology & Hepatology*, *33*(5), 623-630