

A case report of metformin-associated drug-induced liver injury

*Datta A¹

¹Dr. Ankur Datta, Assistant Professor, Department of Community Medicine, EMCH (ex) & Principal Consultant, Diabetes & Obesity Care Center, Cumilla Makka Hospital PLC, Cumilla, Bangladesh.

Abstract

Background: Metformin is one of the most widely prescribed first-line medications for type 2 diabetes mellitus and is generally considered to have a favorable hepatic safety profile. However, rare but serious adverse reactions can also occur. Here, we report a case of clinically significant metformin-induced liver injury. To date, only a few cases of this rare adverse reaction have been reported in the widespread use of metformin for several decades.

Case summary: A 62-year-old man presented at our hospital with a one-week history of polydipsia and polyuria. The physical examination was normal. Fasting blood sugar 10mmol/L, Postprandial blood sugar 14mmol/L, HbA1c 8% was documented and patient was treated with lifestyle modification and 500 mg metformin once daily. Seven days later, he noted fatigue, burning throughout the body, loss of appetite, malaise and jaundice. Then he came to the hospital. He had no history of fever and had not taken other drugs. He denied alcohol abuse, previous liver diseases, blood transfusion and exposure to toxins. During physical examination, his skin and sclera were icteric, and his blood pressure and pulse were normal. No stigmata of chronic liver disease were present. There was no pedal edema or ascites. Then he was sent to consult with a hepatologist. The patient refused to be admitted to the hospital. Laboratory studies revealed that Alanin aminotransferase was 500 U/L, Asparate aminotransferase was 200 U/L, serum bilirubin (total) 5mg/dl, serum Albumin 3g/dL, alkaline phosphatase was 804 U/L, and gamma-glutamyl transferase 600U/L. Others report of CBC, serum creatinine, INR and serum electrolytes were normal. Serologic studies, including antinuclear antibody, anti-smooth muscle antibody, antimitochondrial antibody and viral hepatitis panel for A,B,C, 24 hr urinary copper, were within normal limits. Abdominal ultrasound showed no pathological findings. The patient refused a liver biopsy. Then metformin and premixed insulin were stopped, and esomeprazole magnesium trihydrate was given. After stopping metformin, the patient's clinical condition progressively improved, and liver enzymes were within normal limits in 4 weeks.

Conclusion: Metformin is not considered intrinsically hepatotoxic. It is important that clinicians be alert to the rare side effects of all medicines like metformin. [*J Assoc Clin Endocrinol Diabetol Bangladesh*, 2026;5(Suppl 1): S49]

Keywords: Metformin, Drug-induced liver injury, Hepatotoxicity, Diabetes mellitus, Liver injury

***Corresponding author:** Dr Ankur Datta, Assistant Professor, Department of Community Medicine, EMCH (ex) & Principal Consultant, Diabetes & Obesity Care Center, Cumilla Makka Hospital PLC, Cumilla, Bangladesh, E-mail: ankur.datta42@gmail.com