Clinical Case Study

Persistent Increase in Aspartate Aminotransferase in an Asymptomatic Patient

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CASE

A 66-year-old woman without a preexisting history of liver disease presented with chest discomfort and dyspnea. Laboratory studies revealed an isolated increase in aspartate aminotransferase (AST) that prompted consultation with a hepatologist. The patient was a retired schoolteacher and took no medications. She affirmed alcohol use estimated at <2 oz of spirits daily.

A physical examination revealed a healthy appearing woman with no obvious abnormalities. The sclerae were anicteric. The abdomen was soft, flat, and without palpable organomegaly. There was no edema.

Laboratory studies revealed the following: AST, 544 U/L (reference interval, 11–47 U/L); albumin, 38 g/L (36–50 g/L), alanine aminotransferase (ALT), 23 U/L (7–53 U/L); alkaline phosphatase (ALP), 95 U/L (38–126 U/L); total bilirubin, 4.0 mg/L (3.0–11 mg/L); direct bilirubin, 2.0 mg/L (0.0–3.0 mg/L); γ-glutamyltransferase (GGT), 25 U/L (11–50 U/L); lactate dehydrogenase (LDH), 373 U/L (100–250 U/L); hemoglobin, 139 g/L (121–151 g/L); reticulocytes, 0.008 (0.005– 0.015); haptoglobin, 0.97 g/L (0.27–2.20 g/L); thyroid-stimulating hormone, 3.60 mIU/L (0.35–5.50 mIU/L); antinuclear antibodies, reactive at 1:80 (negative); anti–smooth muscle antibodies, reactive at 1:80 (<1:20); antimitochondrial antibodies, negative; α_1-antitrypsin, 1.67 g/L (0.7–2.1 g/L); ferritin, 202 mg/L (10–291 mg/L); ceruloplasmin, 380 mg/L (180–460 mg/L); hepatitis B surface antigen, nonreactive; anti–hepatitis C virus, nonreactive; aldolase, 4.5 U/L (<8.0 U/L); and creatine kinase (CK), 116 U/L (38–234 U/L). The results of radiographic studies, including abdominal and chest computed tomography scans were unremarkable. Given the isolated increase in AST without signs or symptoms of liver disease, the patient was advised to discontinue alcohol consumption, and the clinical laboratory was contacted for additional studies.

Questions to Consider
• What are the causes of elevated transaminases?
• What can cause an isolated elevation in aspartate transaminase (AST)?
• Discuss the role of pyridoxal phosphate (Vitamin B6) in laboratory testing for transaminases.
• What other approaches might be taken to determine the cause of the isolated elevation of AST in this patient?

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Final Publication and Comments

The final published version with discussion and comments from the experts will appear in the August 2009 issue of *Clinical Chemistry*. To view the case and comments online, go to http://www.clinchem.org/content/vol55/issue8 and follow the link to the Clinical Case Study and Commentaries.

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