Abnormal Liver Function Tests

Changes to enzymes responsible for liver function may be a sign of liver injury or disease. The enzymes alanine transaminase (ALT), aspartate transaminase (AST), alkaline phosphatase (ALP), and bilirubin are measured in blood tests.


When ALT and AST are above limits by a large amount, US abdomen, US duplex Doppler abdomen, and CT abdomen/pelvis with contrast are usually appropriate. MRI abdomen without and with contrast with MRCP, MRI abdomen without contrast with MRCP, and CT abdomen/pelvis with contrast may be appropriate.

High ALP can result from liver disease (https://www.radiologyinfo.org/en/info/fatty-liver-disease) or other causes. When both ALP and gamma-glutamyl transpeptidase are high, the cause is usually liver disease. US abdomen, MRI abdomen without and with contrast with MRCP, and CT abdomen/pelvis with IV contrast are usually appropriate. US duplex Doppler abdomen, MRI abdomen without contrast with MRCP, and CT abdomen/pelvis with contrast may be appropriate.

High bilirubin levels (called hyperbilirubinemia) can result from a bile flow blockage, liver disease, or other causes. With hyperbilirubinemia, US abdomen, MRI abdomen without and with contrast with MRCP, MRI abdomen without contrast with MRCP, and CT abdomen/pelvis with contrast are usually appropriate. CT abdomen/pelvis without contrast may be appropriate.

For more information, visit the Fatty Liver Disease and Liver Fibrosis (https://www.radiologyinfo.org/en/info/fatty-liver-disease) page.

— By Emily Guernsey and Nina S. Vincoff, MD. This information originally appeared in the Journal of the American College of Radiology.

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