Evaluating Patients With Mildly Elevated Transaminase Levels

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Case Study: S.B. is a 52-year-old woman with recurrent stage IV ovarian cancer. She initially presented three and a half years ago with complaints of abdominal pain, increased abdominal girth, and abdominal bloating. A CA-125 blood test was elevated, and a computed tomography scan of the abdomen and pelvis revealed bilateral ovarian masses highly suspicious for malignancy. She was taken to surgery for a total abdominal hysterectomy, bilateral salpingo-oophorectomy, and suboptimal tumor reduction. Pathology revealed poorly differentiated papillary serous ovarian cancer. Metastatic disease was noted in the rectosigmoid area and vaginal apex. Postoperatively, she received six cycles of paclitaxel and carboplatin. At completion, her CA-125 normalized and imaging studies showed no evidence of disease. However, within three months, her CA-125 was elevated and a palpable mass at the vaginal apex was proven by biopsy to be recurrent disease.

S.B. presented to a cancer center for further treatment recommendations. She received vaginal radiation and then enrolled in a clinical trial and received carboplatin, sargramostim (granulocyte macrophage–colony-stimulating factor [GM-CSF]), and interferon gamma-1b. After five cycles of chemotherapy, S.B.'s serum alanine aminotransaminase (ALT) and aspartate aminotransaminase (AST) were mildly elevated (less than five times the upper limit of normal) and she had vague complaints of right-side abdominal soreness. Her treatment was delayed for two weeks, and she ultimately was removed from the clinical trial and placed on single-agent carboplatin. S.B. now presents to the clinic for a chemotherapy appointment and is complaining of weight gain, fatigue, and persistent right-side abdominal soreness. Physical examination reveals mild tenderness in her right upper quadrant but no hepatosplenomegaly. Laboratory evaluation reveals persistent, mildly elevated transaminase levels, as well as elevated serum lipids. S.B.'s medical history is significant for hypertension, hypothyroidism, and sarcoidosis. She denies any history of substance abuse, including alcohol and drugs. She denies tobacco use. Her family history is unremarkable.

Abnormal laboratory results noted during routine follow-ups or screening visits can be perplexing to healthcare providers. Clinicians are responsible for interpreting and addressing abnormal results to provide superior and cost-effective health care. All laboratory tests have a range of normal values, defined as the average value in a group of healthy individuals plus or minus two standard deviations. Five percent of individuals have laboratory values that fall either 2.5% above or 2.5% below the limits of normal (Pratt & Kaplan, 2000). Normal laboratory values vary according to a number of physiologic factors, such as age, gender, blood group, and postprandial states, as well as other contributing factors, such as pregnancy (Green & Flamm, 2002). Therefore, providers must be aware of such factors with all patients. Serum liver enzymes can be elevated in as many as 6% of the American population in the absence of any real liver pathology (Green & Flamm).

Many healthcare providers order serum liver enzymes as part of routine physical examination. Serum liver studies often are called "liver function tests"; however, standard liver chemistries do not measure how a liver actually is functioning. The tests can detect hepatocellular injury, intra- or extrahepatic cholestasis, infiltrating diseases of the liver, impairment of hepatic synthesis, and alterations in liver metabolism (Green & Flamm, 2002).

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