Elevation of Troponins in Rhabdomyolysis

To the Editor:

In their excellent comprehensive clinical review on rhabdomyolysis in CHEST (September 2013), Zimmerman and Shen, to our surprise, did not mention that levels of troponin I and troponin T may be elevated. As clinicians, we realized that this can cause some difficulty in the interpretation of these specific biomarkers of cardiac injury, especially since rhabdomyolysis may occur with medication prescribed for patients with a history of heart disease, namely, statins, fibrates, and amiodarone. Up to 17% of patients may have elevated troponin levels, according to a study performed by Zimmerman and Shen.

To keep in mind that a considerable number of patients with rhabdomyolysis may lack clinical signs and symptoms. So what other clues can be helpful in detecting cases of skeletal muscle injury?

Some laboratory parameters can be of assistance that were not mentioned in the review article. Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) concentrations are laboratory tests typically included in a comprehensive metabolic panel. It is important to mention that both AST and ALT are present in skeletal muscle, with ALT being more specific to the liver. Patients with rhabdomyolysis tend to have abnormal aminotransferase in the absence of liver disease. In such cases, AST concentration tends to be higher than ALT concentration, and the AST to ALT ratio may be ≥ 2.1, similar to alcoholic liver disease.

In supporting this notion, one of us (A. E. M.) recently took care of two patients with clinically asymptomatic rhabdomyolysis. Both patients had an AST to ALT ratio of 2.1, with no evidence or risk factors for liver disease. Neither patient had any muscle weakness or muscle tenderness. Creatine kinase level was elevated 15-fold in the first and 13-fold in the second patient. IV hydration was started. Therefore, it is essential to keep a high index of suspicion for rhabdomyolysis in an appropriate clinical setting with an elevated AST to ALT ratio.

References