Elevation of Troponins in Rhabdomyolysis

To the Editor:

In their excellent comprehensive clinical review on rhabdomyolysis in CHEST (September 2013), Zimmerman and Shen,1 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 some difficulty in the interpretation of these specific biomarkers. The causes of the elevation are debated, but it is important to emphasize that with hydration, the cornerstone of the treatment of rhabdomyolysis, troponin levels revert to normal.3 It is important to mention that both AST and ALT are present in skeletal muscle: a noncardiac source of increased circulating concentrations of cardiac troponin T. J Am Coll Cardiol. 2011;58(17):1819-1824.

Rhabdomyolysis

Some Extra Clues to Diagnosis

To the Editor:

We read the recently published article in CHEST (September 2013) by Zimmerman and Shen1 with interest. The authors prepared a high-quality review on the topic of rhabdomyolysis. It is essential to keep in mind that a considerable number of patients with rhabdomyolysis may lack clinical signs and symptoms.2 So what other clues can be helpful in detecting cases of skeletal muscle injury?2

Some laboratory parameters can be of assistance that were not mentioned in the review article.1 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.3 Patients with rhabdomyolysis tend to have abnormal aminotransferase in the absence of liver disease.3 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.3

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

The authors of the article by Bhorade et al. in CHEST (June 2013) about the interobserver agreement of grading acute rejection after lung transplantation. They indicated that the overall concordance rates for grade A and grade B biopsy specimens were 74% and 89%, respectively, and interobserver discrepancies for acute rejection were lower when pulmonary biopsies were performed earlier (≤6 weeks) compared with later time points. However, we would like to add more information after deeper analysis of the data and address some important concerns.

In the Bhorade et al. study, the interobserver agreement for grade A and grade B readings were presented as the overall concordance rate, as well as that determined by treatment arm and clinical symptoms. The overall concordance rate ranged from 62% to 91%, according to the data from the tables in the article; however, it should be noted that the interobserver agreement provided by the authors was ambiguous and requires further analysis. Therefore, we conducted a new analysis to reevaluate the concordance of interpretations for acute rejection between site pathologist and central pathologist (based on the data presented in tables in the article). The score of Cohen’s k coefficient ranged from 0 to 1, where k coefficients ≥0.75 represent fair agreement, scores <0.4 represent poor agreement, and the scale of 0.4 to 0.75 was considered moderate agreement. The McNemar-Bowker test was performed to estimate the diagnostic differences between site pathologist and central pathologist. After thorough statistical analysis of the data from Tables 2 and 3 in the Bhorade et al. article, we found that