I Dare You!
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CASE DESCRIPTION

A 23-year-old man presented to the emergency department with thigh and flank pain. His medical history was unremarkable. Serum test results included the following: aspartate aminotransferase, 4007 U/L (reference interval, 11–47 U/L); alanine aminotransferase, 715 U/L (reference interval, 7–53 U/L); alkaline phosphatase, 67 U/L (reference interval, 38–126 U/L); lactate dehydrogenase, 6150 U/L (reference interval, 100–250 U/L); creatinine, 1.6 mg/dL (141/8262 μmol/L) [reference interval, 0.7–1.3 mg/dL (62–115 μmol/L)]. A urine sample (Fig. 1) was also collected at the time of presentation.

QUESTIONS

1. What conditions might cause urine to have this appearance?
2. What laboratory tests might be useful for patients with dark brown urine?

The answers are below.

ANSWERS

Dark brown urine can be caused by foods, medications, bilirubin, hematuria or hemoglobinuria, and myoglobinuria. Tests for markers of renal and liver function, urinalysis, and assays of muscle enzymes and hemoglobin are useful. The urine was positive for “blood” but not for red
blood cells, suggesting the presence of hemoglobin or myoglobin. Further questioning of the patient revealed that he had performed 2500 squats 3 days prior, on a dare. The patient’s serum creatine kinase activity was 310 000 U/L (reference interval, 30–200 U/L), and his serum myoglobin result was 68 860 μg/L (reference interval, 0–110 μg/L). Damaged muscle cells release creatine kinase (MM isoform), myoglobin, and aspartate aminotransferase, as well as lesser amounts of alanine aminotransferase and lactate dehydrogenase.

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News & Views

Clinical Chemistry’s 2013 Special Issue: Cancer

The January 2013 issue of Clinical Chemistry will focus on cancer. The editors of this issue are Dr. Eleftherios P. Diamandis, Dr. Robert C. Bast, Jr., and Dr. Carlos López-Otín. The issue will highlight recent advances in the diagnosis and therapy of cancer and will address diverse themes, such as cancer genomics, proteomics, metabolomics, epigenomics, diagnostics, biomarker discovery and validation, cancer stem cells, mechanisms of cancer metastasis and the tumor microenvironment, and others. The issue intends to provide a state-of-the-art snapshot of cancer research, with special emphasis on diagnostics. Other usual features of Clinical Chemistry, such as Point/Counterpoint, Q&A, Citation Classic, and Reflection, will also be included and feature cancer themes. We hope the readers of Clinical Chemistry will find this Special Issue a useful, educational resource for themselves and their students.

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