

Question 23



Lisa is a 48 y/o female who decided that she wanted to get in shape for her 50th birthday. She joined a 'spinning' class. She said when she arrived it had older (>60 y/o) females and so she thought it would be easy to keep up. However, she had to really work hard and sweated profusely. She was shaky when she dismounted, drank 2 large Gatorade® drinks plus water. When she went home, she had joint issues, took 2-3 OTC ibuprofen. The next day, she drank more Gatorade® and took more NSAIDS. She started peeing dark coke-colored urine and presented to you in the ED.

FH: + for HTN in paternal family, diabetes in her maternal side

PE: 160/98, lungs/chest clear, abdomen without bruits, trace edema (if you look hard), BMI 28

Labs: SCr 1.8mg/dL (GFR 32ml/min), K 6.1mEq/dL, urine dark with 4+ blood on dip, 1-2 RBCs/hpf on micro, + hyaline casts

What is the treatment for Lisa?

- A) Hemodialysis
- B) 0.9% NaCL IV
- C) A foley
- D) Activated charcoal



Answer 23

The correct answer is **B) 0.9% NaCL IV**

In order to answer this question, you need to know what disease state Lisa presents with. Her presentation is classic for rhabdomyolysis. Since we needed you to jump to the 2nd answer in order to correctly answer the question, we wanted to make it easy. These types of questions, what are referred to as '*2nd generation*' questions, are the goal of the item writers at NCCPA. You need to already know 1 fact in order to go to the goal of the question.

Lisa is a true story and more reason to not dismiss us 'old people'! After this episode of rhabdo, she appreciated the fact that she shouldn't make generalizations about age...

Rhabdomyolysis occurs when skeletal muscle breaks down. We see this more often in crush injuries, and/or in marathon runners. The muscle breakdown releases myoglobin and the urine takes on a distinctive red or dark-red color. Urine dipsticks will falsely read 4+ blood because they are unable to distinguish between myoglobin and hemoglobin. Only on microscopy can you tell the difference.

Lisa had caused the beginnings of rhabdo with the exercise (often referred to as exercise-induced rhabdo) but then added insult to injury by adding Gatorade® (high salt content) and NSAIDS. This double whammy to the kidney (who was trying to deal with a large salt load + a little ATN from the medications), increased the chances of rhabdo.

So the question is treatment because you knew enough to realize you were dealing with rhabdo! Dialysis (**A**) is only used if conservative care does not work. In 35 years, we have not had to jump to dialysis in any of our rhabdo patients. As our practice is in the DC metro area and we had multiple sporting events (Marine Corps Marathon, Army 10-miler, Cherry Blossom Run) and accidents (Pentagon attack, earthquake, Metro accident) with many, many rhabdo cases, I imagine our outcomes are not unlike others throughout the US. Even crush injuries leading to severe rhabdo are able to be treated with IV fluids.

A foley (**C**) or activated charcoal (**D**) will not help treat Lisa's rhabdo.

Reference:

NKF Primer on Kidney Disease 7th edition, Editors: Gilbert S, Weiner D. Elsevier Publishing, Oct 2017.

Malinoski DJ, Slater MS, Mullins RJ. Crush injury and rhabdomyolysis. *Crit Care Clin.* 2004 Jan;20(1):171-92.

