Dark Urine in a Dialysis Patient Treated for a Bloodstream Infection

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Case Description
An 83-year-old woman with diabetic nephropathy, who had been on dialysis for 2 months and had a dialysis catheter in place due to poor shunt development, presented to our hospital with fever. She was diagnosed with catheter-related bloodstream infection caused by Enterobacter cloacae. Cefozopran was initiated intravenously after catheter removal. She responded well to the treatment; however, on day 4 of cefozopran treatment, her urine became dark (Figure 1A). She had no myalgia, weakness, or paralysis, and no signs of malignant melanoma. A dipstick test showed that urine protein, urine occult blood, urobilinogen, and urine sugar were all negative. Urine sediment examination also revealed no red blood cells, white blood cells, or casts in the urine. Moreover, neither myoglobin nor iron were detected in the patient’s urine, and her urine culture was negative. As the cause for dark urine was not identified, we continued to monitor her. Her urine color returned to normal 3 days after completing cefozopran treatment (Figure 1B); therefore, the dark urine was determined to be induced by cefozopran.

Myoglobinuria, alkaptonuria, and melanoma are the most common causes of dark urine, but antibiotics such as metronidazole and drugs such as L-Dopa can also cause dark urine (1). Administration of cefepime, a fourth-generation cephalosporin, may cause dark urine.

The color of urine changes for a variety of reasons. Green urine can be caused by Pseudomonas infection, biliverdin, and medications such as propofol, methylene blue, indigo blue, and cimetidine (2). Rifampin, warfarin, and chloroquine can turn urine red (1). Hemolytic anemia, glucose-6-phosphate dehydrogenase deficiency, and sickle cell anemia can lead to a hemolytic anemia and make urine reddish in color (1). Isoniazid, sulfasalazine, and riboflavin can turn urine orange (1). Purple bag syndrome may occur in patients with long-term indwelling bladder catheters (3).

The cefozopran package insert states that cefozopran can change the color of urine (4), but we have

Figure 1. | Dark urine and normal urine. (A) The patient’s urine changed from clear to dark on day 3 of cefozopran treatment. (B) The patient’s urine returned to normal on day 4 following discontinuation of cefozopran.

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not encountered any clinical reports of this side effect to date. This case confirms the package insert claim that cephalosporins may cause urine to darken. Physicians should be aware of this side effect of cefozopran use.

**Teaching Points**

- Changes in urine color are caused by various etiologies.
- Medications are one of the causes for urine color change; so, if you see a change in urine color, check drug use.
- Cefozopran should be considered a cause for darkening urine.

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**Author Contributions**

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**References**


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