Green urine: an association with metoclopramide

Sir,

Green urine is a distinctly unusual and intriguing finding in clinical medicine. A healthy 28-year-old man presented to the emergency department with abdominal pain, nausea and vomiting of 1 day’s duration. He did not take any medications, supplements or any unusually coloured food items. The patient was afebrile but had evidence of volume depletion and orthostasis. The abdomen was benign and the physical exam was otherwise unremarkable. Lactated Ringer’s solution and 0.9% saline were administered to the patient. He also was given a 10 mg intravenous metoclopramide injection for nausea. The first specimen of urine collected 2 h after the injection was noted to be green. He had last voided/C24 10 h prior to presentation to the hospital. The patient had not noticed any changes in the colour of his urine or stool prior to presentation. Upon admission, the blood urea nitrogen was 4.3 mmol/l and creatinine was 99 m mol/l. A urinalysis revealed specific gravity of 1.025, pH 6.5, trace protein, 2+ glucose, 1+ ketones, trace occult blood and no bilirubin. Blood and urine cultures remained sterile and stool was of normal colour. Ceftazidime and levofloxacin were administered. Computed tomography of abdomen, esophagogastroduodenoscopy and colonoscopy were unremarkable. The colour of urine changed to green-yellow on the third day. By the fourth hospitalization day and until his discharge, the urine remained a clear, yellow colour (Figure 1). His serum creatinine improved to 69 μmol/l. On the ninth hospitalization day, the patient was discharged with a diagnosis of ‘viral gastroenteritis’.

Although dietary causes are thought to affect urinary colour, this patient’s lack of such history and presence of normal-coloured stool did not lend support to a dietary source of his urinary discoloration. In addition, he did not develop a change in his urine colour until presentation to the hospital, making an iatrogenic cause of this discoloration likely. The patient’s only medications prior to the onset of green urine had consisted of metoclopramide. In a similar case, a patient who had presented with nausea and vomiting developed green urine after receiving cimetidine and promethazine HCl (Phenergan) [1]. FD&C Blue No.1 has been detected in the urine of patients who had been receiving this food dye in their enteral feedings and the authors concluded that absorption of this dye may cause dark green discoloration of urine [2,3]. It is of note, however, that one of these patients had also received metoclopramide [2]. Other drugs that have been associated with green urine include propofol [4,5], methylene blue [6,7] and methocarbamol [6]. While it is difficult to show a causal link, the temporal association and lack of any other known causes suggest that metoclopramide was the offending agent. The prolonged duration of discoloration may be attributed to renal failure, whereby the clearance of metoclopramide may be as little as 20% of normal [8]. The occurrence of green urine imparts a significant degree of anxiety to the patient, while arousing the clinician’s curiosity. It is hoped that with better awareness of healthcare providers regarding benign causes of green urine, lengthy, invasive investigation may be avoided.

Acknowledgements. I am indebted to Ms Lucinda Allshouse for her assistance with retrieval of the reference articles.

Conflict of interest statement. None declared.

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7. Slawson M. Thirty-three drugs that discolor urine and/or stools. RN 1980; 43: 40–41
doi:10.1093/ndt/gfh359

Fig. 1. The colour of the urine on day 2 (left) and on day 6 (right) of hospitalization. (This figure can be seen in colour online as supplementary data)