


Acute urinary retention and green urine: unusual findings in the emergency department

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DESCRIPTION

A 61-year-old man was admitted to the emergency department with a 24-hour history of anuria and abdominal discomfort. He reported a urinary tract infection in the previous month and had started a product purchased from herbalists in Brazil a few days earlier. Abdominal examination revealed hypogastric tenderness and a distended bladder. A urinary catheter was placed and 900 mL of green urine were drained (figure 1). Blood tests revealed normal renal function, bilirubin and inflammatory markers. Urine analysis revealed normal urine pH and density (6.0 and 1.015, respectively), normal urobilinogen (0.2 mg/dL) and absence of nitrites and leucocytes.

It was found that the product contained *Atropa belladonna* extract and methylthioninium chloride (methylene blue). The patient was discharged from the emergency department, with indication for immediate suspension of the drug and taking tamsulosin 0.4 mg for 7 days. Urine returned to normal after 5 days. Bladder catheter was removed 1 week later, in follow-up consultation.

A. belladonna extract contains the anticholinergic alkaloids atropine, hyoscyamine and scopolamine. Due to its effects, the compounds that contain this

extract are used to treat cholinergic symptoms of Parkinson's disease and smooth muscle spasms.¹

Green discolouration of urine is a rare phenomenon, with the most frequent cause being pharmacological: methylene blue and indigo blue dyes are associated with this discolouration^{2 3}; there are also reports secondary to the administration of propofol.⁴ Other drugs, such as cimetidine, promethazine, amitriptyline, indomethacin and metoclopramide are also associated with this event, as well as infection by *Pseudomonas aeruginosa*.⁵

In this case, the temporal link between the introduction of the drug and the symptoms allowed us to set a causal relationship for the condition. The anticholinergic effects and green discolouration of the urine are reversible after discontinuation of the drug.

The authors intend to emphasise the importance of taking a complete medical history in the emergency department. The pharmacological history, including the use of products without medical prescription and herbal remedies, which are not always properly explored or valued, may be the key to the diagnosis.

Learning points

- ▶ Green discolouration of urine is a rare event. It has several causes, such as drugs, dyes or *Pseudomonas* infection.
- ▶ Even in the emergency department, a correct and complete medical history is of major importance.
- ▶ Recent pharmacological treatments may be considered in the differential diagnosis of the clinical findings.

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REFERENCES

- 1 Kwakye GF, Jiménez J, Jiménez JA, et al. *Atropa belladonna* neurotoxicity: implications to neurological disorders. *Food Chem Toxicol* 2018;116:346–53.



Figure 1 Green urine drained after urinary catheterisation in the emergency department.



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- 2 Koratala A, Leghrouz M. Green urine. *Clin Case Rep* 2017;5:549–50.
- 3 Stratta P, Barbe MC. Green urine. *N Engl J Med Overseas Ed* 2008;358:e12.

- 4 Boshkovska Spaseski M, Spaseski D. Green urine. *N Engl J Med* 2020;383:e128.
- 5 Gillett MJ, Burnett JR. Medications and green urine. *Intern Med J* 2006;36:64–6.

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