

Case Report

Green Urine: A Rare Side Effect of Propofol in a Pediatric Case

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Abstract

Propofol is a short-acting intravenous sedative-hypnotic agent widely used to induce and maintain general anesthesia and sedation. A rare side effect of propofol is the green discoloration of the urine. This color change is thought to be caused by quinol derivative excreted in the urine. Green urine associated with propofol is benign and improves with the discontinuation of the drug. In this case report, a patient with green discoloration in urine after propofol infusion and the information in the literature are reviewed.

Keywords: Greenurine; Propofol; Anaesthesia

Introduction

Propofol is an intravenous hypnotic drug commonly used in operating rooms and intensive care units. Provides rapid awakening and recovery, allowing for reliable neurological evaluation. Green discoloration in urine is a rare side effect of propofol and can cause unnecessary worry and laboratory testing when unknown to the clinician. Some other drugs, dyes, metabolic disorders, and urinary tract infections may also result in this finding. There are limited reports in the literature regarding the green color change in urine due to propofol [1-7]. In this case report, color change in green urine was reported in a pediatric patient sedated with propofol after a traffic accident.

Case Presentation

A 16-year-old boy applied to our intensive care unit after a motor vehicle accident. There was subarachnoid hemorrhage and tibia fracture. The patient with a Glasgow coma scale of 6 was followed up with a mechanical ventilator in the intensive care unit. Midazolam and Remifentanyl infusion were used as sedatives during mechanical ventilation. In the biochemical analysis, albumin: 4.1 g/dl, total bilirubin: 0.7 mg/dl, AST: 192 U/L, ALT: 150 U/L, BUN: 16, creatinine: 0.9 mg/dl. Erythrocyte Trans fusion was applied to the patient whose hemoglobin value was 7.1 g/dl. Cerebral Tomography was repeated 24 hours after admission to the ICU, and the subdural hematoma a regressed. On the third day of admission, midazolam and remifentanyl were replaced with propofol infusion. After 63 hours of propofol infusion, the patient's urine was grass green. In the laboratory examination, serum albumin level was 3.6 g/dl, total

bilirubin level 0.8 mg/dl, and direct bilirubin 0.3 mg/dl. There were no features in the urinalysis and microbiological analysis. The patient did not use any other medication that could discolor his urine. Propofol infusion was discontinued considering that propofol may cause green discoloration in urine. After 7 hours, urine color returned to normal. He took a total of 1188 g of propofol. The patient was extubated on the 10th day in the intensive care unit, and non-invasive mechanical ventilation was applied for another four days. Twenty-three days later, the patient was operated on with spinal anesthesia for a tibia fracture. He was transferred to the orthopedic service on the 24th day without any problem.

Discussion

Many endogenous and exogenous substances can cause green discoloration in urine. Drugs (cimetidine, promethazine, amitriptyline, indomethacin, metoclopramide, methocarbamol, flutamide), dyes (methyleneblue, indigoblue, biliverdin, fooddyes), metabolic disorders (Hartnupdisease), Pseudomonas Aeruginosa infection, and vesical fistulas are other potential causes of green urine discoloration. Propofol is mainly metabolized in the liver and conjugated to glucuronides and the corresponding sulfate conjugates of quinol. The green color change in the urine is thought to be caused by these phenolic metabolites excreted in the urine. These metabolites are in active, non-nephrotoxic, and do not reflect renal function. In addition to urine, green discoloration has also been reported in the hair and liver. Although green urine color is generally defined in patients who receive propofol infusion for a long time, it can also be seen with a single dose of propofol only in anesthesia induction. The total amount of propofol infused and the infusion time that will cause discoloration are not standard and will vary depending on the situation. Green urine associated with propofol is benign and has been shown to improve with in 2 hours to 2 days after discontinuation of the drug in reported cases. It is thought that propofol does not increase the risk of infusion syndrome [8]. It has been reported that decreasing the propofol infusion rate below 1.5 mg/kg/hour restores urine color to standard [9]. KeikoFujii et al. [10] in cases where they saw green urine after using propofol, they compared the previous normal and green urine by analyzing them with Liquid Chromatography-Mass Spectrometry (LC-MS) but found similar characteristics in both

Citation: Müge Ç, Çelik MC, Sibel T. Green Urine: A Rare Side Effect of Propofol in a Pediatric Case. Am J Clin Case Rep. 2021;2(7):1046.

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Publisher Name: Medtext Publications LLC

Manuscript compiled: Oct 07th, 2021

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urines analyzes at 490 nm and 590 nm. In our case, we first checked the patient's medication list. Except for propofol, no drug could cause this color change. A traumatic enterovesical fistula was suspected, but there were no clinical signs for a fistula. Urine culture results were also negative. The color change resolved 7 hours after the propofol infusion was discontinued.

Result

Green urine is a rare and benign side effect of propofol. The color change of urine does not depend on the amount of propofol administered or the rate and duration of the infusion. It is essential to know and recognize this side effect early to prevent unnecessary laboratory tests and time loss.

References

1. Gillett MJ, Burnett JR. Medications and green urine. *Intern Med J*. 2006;36(1):64-6.
2. Tan CK, Lai CC, Cheng KC. Propofol-related green urine. *Kidney Int*. 2008;74(7):978.
3. Blakey SA, Hixson-Wallace JA. Clinical significance of rare and benign side effects: propofol and green urine. *Pharmacotherapy*. 2000;20(9):1120-2.
4. Gautam R, Sankalp Y. Green Urine Due to Propofol: A Case Report with Review of Literature. *J Clin Diagn Res*. 2015;9(11):OD03-4.
5. Corzo-Gilaber JR, Domínguez-Fuentes MB, Viejo-Almanzor A, García-Gil D. Green urine after a rectosigmoidoscopy. *Emergencias*. 2019;31(4):291.
6. Barbara DW, Whalen FX Jr. Propofol induction resulting in green urine discoloration. *Anesthesiology*. 2012;116(4):924.
7. Lepenies J, Toubekis E, Frei U, Schinder R. Green urine after motorcycle accident. *Nephrol Dial Transplant*. 2000;15(5):725-6.
8. Pedersen AB, Kobborg TK, Larsen JR. Grass-green urine from propofol infusion. *Acta Anaesthesiol Scand*. 2015;59(2):265-7.
9. Ku BD, Park KC, Yoon SS. Dark green discoloration of the urine after prolonged propofol infusion: a case report. *J Clin Pharm Ther*. 2011;36(6):734-6.
10. Fujii-Abe K, Kawahara H, Fukayama H. An analysis of green discoloration of urine caused by propofol infusion. *J Clin Anesth*. 2016;35:358-60.