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OVER-THE-COUNTER MEDICATION OVERUSE AND BOWEL OBSTRUCTION

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To the Editor

Although adverse drug events are increasingly well documented in the geriatric population, the focus on over-the-counter (OTC) medications is typically limited to medications such as nonsteroidal anti-inflammatory drugs and anticholinergics. This case highlights a serious effect of overuse of a common antidiarrheal agent: loperamide.

CASE REPORT

An 81-year-old woman with a history of dementia, diabetes mellitus, and chronic renal insufficiency presented to her primary nephrologist with a 1-week history of fatigue and low-grade temperatures. Her review of systems was also remarkable for recurring diarrhea over the last year that had resolved recently after receiving increasing doses of loperamide from her family, the exact amount unclear. She reported no changes in her fluid intake or urinary output. Her physical examination was remarkable for a distended abdomen. She was referred to the emergency department, where her abdomen was found to be further distended, and she became progressively tachypneic. A Foley catheter was placed, with immediate output of 500 mL of urine but no resolution of symptoms or distention. Laboratory studies revealed high blood urea nitrogen (133 mg/dL from her baseline of 106 mg/dL) and creatinine (2.5 mg/dL from her baseline of 2.2 mg/dL), bicarbonate of 12 mEq/L, an anion gap of 14 mEq/L, and a normal lactic acid of less than 0.3 mg/dL. An arterial blood gas revealed a pH of 7.08, partial pressure of carbon dioxide of 28 mm Hg, and partial pressure of oxygen of 81 mmHg. She was intubated, and emergent computed tomography (CT) of her abdomen and pelvis revealed marked dilation of the sigmoid colon and rectum with rectal impaction of stool, along with moderate bilateral hydronephrosis, thought to be caused by mass effect from the dilated sigmoid (Figure 1A). No obstructing calculus was seen. She was transferred to the medical intensive care unit, where she was

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started on an aggressive bowel regimen and manually disimpacted. Within 12 hours of disimpaction her electrolyte disturbance and renal function returned to baseline, and she was successfully extubated. On Day 4 of admission, follow-up CT demonstrated complete resolution of the sigmoid dilatation and bilateral hydronephrosis (Figure 1B).

DISCUSSION

Acute kidney injury (AKI), often due to prerenal causes (volume depletion), is a frequent basis for hospital admission, accounting for as much as 10% of individuals admitted to the inpatient ward and 15% of those admitted to the intensive care unit;^{1–3} however, this is usually from urinary and not bowel obstruction, and the latter has limited description in the literature as a cause of AKI.^{4–8} To the knowledge of the authors of the current letter, it has never been described as secondary to a nonprescription medication such as loperamide for diarrhea.

This case depicts the drastic consequences that can occur from overuse of OTC medications in the elderly population. OTC medications are responsible in all age groups for a considerable percentage of overdose presentations to emergency departments.⁹ This is of particular concern in elderly adults because they represent the majority of admissions for adverse drug reactions.¹⁰ Although this has been attributed to such factors as age-related decrease in renal and hepatic metabolism, high body mass, and comorbidities, a lack of representation in many of the studies that drive drug dosing has exacerbated it.^{11,12} Drug–drug interactions due to polypharmacy are also a significant factor in elderly adults, with the average elderly adult taking six to nine medications concurrently,¹¹ with potentially more than half available without a prescription.¹³ In addition, because of lack of pharmacy involvement, OTC medications can be absent from the medical record, often because of forgetfulness or an individual's belief in lack of risk based on the medication's nonprescription status.¹⁴

In conclusion, although this is a dramatic and unusual presentation of bowel obstruction, the underlying cause, overuse of an OTC medication, is not; this emphasizes the importance of discussing and documenting all medication use in older adults—with patients and caregivers.

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Figure 1.

(A) Bowel imaging Day 1 (on admission): Marked dilation of the sigmoid colon and rectum with rectal impaction of stool, note moderate bilateral hydronephrosis due to mass effect from the dilated sigmoid (arrow). No obstructing calculus. (B) Bowel imaging Day 4 (after disimpaction): Interval resolution of the sigmoid dilation and bilateral hydronephrosis.