



# Yo, Gabapentin

## A 44 year-old man with somnolence

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### Learning Objectives:

- Recognize the toxidrome of gabapentin toxicity
- Identify risk factors for gabapentin toxicity

### Case:

A 44 year-old man with peripheral vascular disease, diabetes and chronic renal insufficiency (baseline creatinine 1.3) developed somnolence over the preceding 24 hours. He underwent surgical amputation of a gangrenous toe on his right foot two days prior. The somnolence started on the first post-operative day and subsequently waxed and waned. Patient had multiple episodes of “shaking all over” without loss of consciousness and also experienced periodic brief, rapid contractions of extremities. Past history included obstructive sleep apnea and coronary artery disease. He had received minimal pain medications and was using his bi-pap device nightly at home settings. His blood sugar was checked on a scheduled basis and was normal. Medical consultation was requested.

Medications included his home doses of insulin, furosemide, metoprolol, pravastatin and gabapentin. He was also receiving low dose morphine, vancomycin and metronidazole.

He was afebrile with normal pulse and blood pressure. Heart sounds were regular and without murmur. Lungs were clear. He was somnolent but arousable and oriented to place and time. Diffuse tremor was noted. Cranial nerves II-XII were normal and he had intact proximal and distal strength.

His electrolytes were unremarkable except for creatinine of 2.1. TSH and liver function tests were normal.

On further questioning, patient stated that though he was prescribed 1200 mg of gabapentin three times daily, he rarely, if ever, took the full amount at home, as he experienced somnolence and urinary incontinence with this dosing. Gabapentin was discontinued in the hospital and patient’s symptoms resolved over the next 24 hours.

Symptoms of Gabapentin Toxicity (in order of frequency)
Depressed consciousness
Ataxia
Dizziness
Myoclonus
Confusion
Tremulousness

### Discussion:

The general internist should be familiar with the side effects of gabapentin, a commonly prescribed medication with a distinct toxidrome. In a recent case series examining gabapentin toxicity, the biggest predictor of side effects was decreased creatinine clearance. No patients with eGFR above 90 mL/min/1.72m<sup>3</sup> had symptoms, even if gabapentin level was elevated. The most common reported symptoms were, in order of frequency, depressed consciousness, ataxia, dizziness, myoclonus, confusion and tremulousness, most of which were present in this case. The two other factors associated with higher incidence of side effects were older age and increased number of co-morbid diseases.

### Risk Factors for Gabapentin Toxicity

Renal insufficiency\*

Medical co-morbidities

Advanced age

\*must be present

Our patient’s acute renal insufficiency, coupled with his high dose of gabapentin and multiple co-morbidities, likely contributed to the development of toxicity. The combination of somnolence with tremulousness and myoclonus is an unusual side effect profile among sedating medications.

Given the high prevalence of kidney disease and high frequency with which gabapentin is prescribed, the general internist is almost certain to encounter gabapentin toxicity in clinical practice. Prompt recognition of the toxidrome and cessation of the drug are crucial for resolution of symptoms.

### Reference:

Zand L, McKian KP, Qian Q. Gabapentin toxicity in patients with chronic kidney disease: a preventable cause of morbidity. *Am J Med.* 2010;123(4):367-373.