

Learning Objectives

- Emphasize the potential toxicity of Baclofen in patients with end-stage renal disease
- Present the unique presentation of Baclofen toxicity

Background

Baclofen-induced delirium is a known, but rare complication that can be seen in patients with end-stage renal disease (ESRD). As such, it requires high clinical suspicion. We present a unique presentation of a patient who was taking baclofen for singultus.

Case Presentation

A 38-year-old man with ESRD on hemodialysis, hypertension, diabetes mellitus, and chronic left foot ulcer presented to the hospital for behavioral change.

Three days prior to this presentation, the patient underwent a workup for intractable hiccups. Imaging was without any apparent causes. He was prescribed baclofen 10 mg, three times a day for symptomatic relief.

On evaluation, the patient was physically aggressive and non-cooperative with an altered mental status. The patient was requiring physical and chemical restraints for safety reasons. This behavior was entirely different from his baseline. Neurologic assessment, together with computed tomography and magnetic resonance imaging of the brain revealed no acute intracranial processes. There were no apparent derangements in serum or urine studies that could explain his presentation. After two sessions of hemodialysis, he had a complete return to his baseline.



Baclofen-induced encephalopathy in a patient with end-stage renal disease

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Discussion

- Baclofen is a gamma-aminobutyric acid analog
- Inhibits the release of neurotransmitters
- Effective to manage hiccups
- Mainly excreted by the kidney
- Renal dysfunction, with or without uremia is a common cause of hiccups
- Neurotoxicity is the most common side-effect of Baclofen in chronic kidney disease, with manifestations ranging from sedation to respiratory depression
- Most patients with severely impaired renal function will develop toxic symptoms soon after the initiation of low-dose baclofen
- Due to its low molecular weight, low volume of distribution, and low degree of plasma protein binding, baclofen is dialysable
- Despite being primarily renally eliminated, there are no specific dosage adjustments available for patients with kidney disease
- According to the known pharmacokinetics of the medication, there is a potential to develop dosages for patients with renal insufficiency, however, there are no studies showing the safe dose of baclofen in patients with advanced kidney disease
- For the above-mentioned reasons, many clinicians are not aware of the increased risk of toxicity in this patient population