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Oral Baclofen Withdrawal Resulting in Progressive Weakness and Sedation Requiring Intensive Care Admission

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Abstract

Baclofen is a common medication used as a muscle relaxant and antispasmodic. Baclofen-withdrawal syndrome has many symptoms such as sedation, somnolence, and weakness but can include psychological symptoms. We present a 62-year-old female whose oral baclofen was not continued at a skilled nursing facility after discharge following inpatient surgery that led to the development of altered mental status and respiratory insufficiency necessitating intensive care unit admission. Abrupt cessation of baclofen, no matter the mode of administration to the patient, can lead to baclofen-withdrawal syndrome.

Keywords

baclofen, withdrawal, oral baclofen, ventilation sedation, pain

Background

Baclofen is a gamma-aminobutyric acid (GABA) analog that has clinical indications to help treat spasticity and rigidity.[1,2] Spasticity can be an end point of a variety of neurological disorders when there is upper motor neuron damage.[3] The two routes of administration are oral and intrathecal.[1,2]

Withdrawal from baclofen can have clinical manifestations that include agitation, insomnia, confusion, delusions, hallucinations, seizures, visual changes, psychosis, dyskinesia, hyperthermia, and increased spasticity.[2,3] There have been many published cases reporting psychological symptoms in association with baclofen withdrawal; specifically, delirium arising secondary to abrupt baclofen cessation.[4] In the Leo and Baer review, they state that baclofen-withdrawal delirium can be difficult to distinguish from delirium of other etiologies. However, complete resolution of this delirium is possible with simple reinstatement of the patient's baclofen.[4] Psychosis, delirium, and behavioral disturbances can arise abruptly with cessation of baclofen, and patients on chronic therapy are at highest risk.[4]

We report a case of oral baclofen withdrawal developing alerted mental status and respiratory insufficiency. The withdrawal from intrathecal baclofen is well described and understood clinically; however, this case report helps emphasize that the withdrawal symptoms of oral baclofen can be clinically severe.

Case Report

This 62-year-old female was transferred to Vanderbilt University Medical Center (VUMC) Medical Intensive Care Unit (MICU) from an outside hospital secondary to her altered mental status and lower extremity weakness. Her husband reported to the medical resident that she had been experiencing visual hallucinations and altered mentation that was mostly inattention for approximately 3 days. The patient had been recently discharged 9 days earlier, following an admission for revision of T12-L2 laminectomy with hardware failure. Her postoperative course was complicated by wound dehiscence and multiple surgical site infections and the development of a paraspinal abscess requiring incision and drainage. She was discharged to a skilled nursing and rehabilitation facility from VUMC, and because of her altered mentation there, she was moved to an outside hospital and then back to VUMC. Her past medical history was significant for hypertension, obstructive sleep apnea, asthma, smoking, and chronic back pain. She was on an extensive regimen of psychiatric and pain medications as an outpatient, which included promethazine, clonazepam, venlafaxine, modafinil, cyclobenzaprine, gabapentin, OxyContin, oxycodone, and baclofen 20 mg by mouth 3 times daily.

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Upon admission to the MICU, she was immediately started on bi-level positive airway pressure (BiPAP) due to hypoxia (SpO_2 ~85%-90%) and a respiratory rate above 30 breaths per minute. All medications that could be contributing to her diminished mental status continued to be held, including baclofen. Her neurological examination upon presentation to the MICU showed a somnolent patient with delayed responses to verbal commands and no verbal output beyond incomprehensible sounds.

Over the course of 24 hours, the patient's clinical condition did not improve and she continued to require BiPAP. Her mental status had been consistent since admission to Vanderbilt Medical Center; however, all potentially sedating medications had now been held for over 72 hours. Therefore, it seemed unlikely that her mental status could continue to be attributed to oversedation secondary to medication administration. Upon detailed review of her recent prescriptions, it was discovered that she was only supplied with 5 days of baclofen at discharge from her recent admission, and this prescription was not refilled at the skilled nursing facility to which she had been transferred. Her readmission to the referring hospital for altered mental status and respiratory insufficiency came 8 days after discharge, 3 days after her last 20 mg baclofen. With this knowledge in mind, she was given 10 mg of oral baclofen and started back on her oral baclofen at 10 mg 3 times daily. Within a few hours, her mental status improved and she no longer required any respiratory support.

Discussion

Baclofen is a widely used and effective medication for the treatment of spasticity. It acts as an agonist at GABA-B receptors in the spinal cord and throughout the central nervous system (CNS), predominantly preventing calcium influx in presynaptic neurons and reducing presynaptic neurotransmitter release. It has been used in oral formulation since the 1960s and improves spasms in 70% to 96% of patients.[5] The intrathecal route of administration has been used and found to be efficacious since the 1980s in patients with spasticity of spinal origin unresponsive to maximal doses of oral antispasmotics.[6] When compared to the oral route, intrathecal dosing ensures higher cerebrospinal fluid concentrations that are difficult to maintain with oral administration of the drug.[6] Multiple case reports document poor outcomes secondary to abrupt withdrawal from intrathecal baclofen.[6,7] However, reports of withdrawal after discontinuation of oral administration may not be as widely recognized.

Baclofen-withdrawal symptoms may develop when CNS levels of baclofen decline over a short period of time.[6] The clinical symptoms that present after oral baclofen is stopped are usually associated with iatrogenic or intentional drug cessation without adequate attention to weaning the dose.[6] In the case reported, withdrawal symptoms developed within 48 hours of abrupt discontinuation of a 60-mg/d dose. The patient developed an altered mental state that required readmission and, ultimately, another stay within the intensive care unit. Her symptoms were resistant to all measures to increase her alertness and respiratory effort until her oral baclofen was reinstated and her symptoms quickly resolved.

Conclusion

Baclofen is a widely prescribed drug used for the treatment of spasticity. Abrupt cessation of both intrathecal and oral baclofen can result in severe withdrawal symptoms that may be life threatening. Recognition that psychological symptoms (ie, mental status changes) are due to baclofen withdrawal can be difficult in patients with complicated coexisting comorbid conditions such as active infections and multiple psychoactive medications.

Authors' Note

Bret D. Alvis and Christopher M. Sobey approved the final manuscript. The patient was contacted at the completion of the manuscript, and they reviewed the case report and gave written permission for the authors to publish this report.

Declaration of Conflicting Interests

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