

**CASE REPORT****Gabapentin and Buprenorphine Nasal Insufflation in a Patient on Buprenorphine for Opioid Use Disorder**David Embers<sup>1</sup>, Dheepthi Arakonam Ravishankar<sup>1</sup>, Roopa Sethi<sup>2</sup><sup>1</sup>University of Kansas Medical Center, Kansas City, KS<sup>2</sup>University of Kansas Health System, Kansas City, KSCorresponding author: Roopa Sethi, MD. KUMC Department of Psychiatry. 3901 Rainbow Blvd, Kansas City, Kansas 66160 ([rsethi@kumc.edu](mailto:rsethi@kumc.edu))

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Upon introduction into the market, gabapentin was not thought to be a drug with abuse potential. Newer research is showing this to be possible, especially in the population of patients with a history of opioid addiction. Clinicians should pay special attention to the use of gabapentin in clinic settings and be wary of the abuse potential it carries, especially in high-risk populations.

**Keywords:** Opioid use disorder, gabapentin insufflation, high, tolerance, withdrawal**CASE REPORT**

A 30-year-old male Caucasian male with opioid use disorder, benzodiazepine dependence, amphetamine dependence, generalized anxiety disorder, and neuropathic pain presented to our addiction clinic for initiation of buprenorphine for his opioid use disorder (OUD). The patient's mother accompanied the patient and provided collateral history. The mother was currently administering the medications due to her concerns of abuse by her son. The patient began using opiates at 15 years of age which he acquired from the street. He began using heroin at age 17 and reports he would inject intermittently. According to the patient, he was also smoking 1.5 grams of methamphetamine daily, and had previously been abusing benzodiazepines. Additionally, the mother expressed concern over her son's abuse of gabapentin, which he was prescribed for nerve pain and anxiety. The son confirmed that he had been "snorting"

gabapentin 400mg three times along with his buprenorphine to get a "high". He was using gabapentin via nasal insufflation first and later added buprenorphine to enhance the "gabapentin high". He had been prescribed buprenorphine monotherapy by a previous provider as he had expressed allergy to the naloxone component and hence not prescribed the buprenorphine-naloxone combination. Patient reported that he had falsely reported "allergy" to the buprenorphine-naloxone combination to be able to get monotherapy to be able to use it by nasal insufflation. He described the feel "high" that he got from the combination as increased calm, relaxation, pain control and less anxiety symptoms when the combination of buprenorphine and gabapentin were snorted. Abrupt discontinuation of insufflation, when the patient would run out of his prescribed medications, would lead to increased irritability, anxiety, pain and dysphoria, confusion and tremors, and tachycardia and palpitations. He would then

spend more and more time trying to get gabapentin from other providers as he would feel withdrawal symptoms. He also developed tolerance to gabapentin and got increasing doses from his physician without the physician being unaware of his insufflation. Because of his use patterns, he would not be able to maintain employment and his relationship with his family deteriorated. As a result, his mother intervened as he was living with her and found out about his insufflation. She then brought him to our clinic for further treatment. His gabapentin was discontinued and he was restarted on a low dose of buprenorphine-naloxone combination therapy that was increased slowly. He tolerated the medication well and did not develop documented allergy like symptoms to the combination of buprenorphine-naloxone. We check the prescription drug monitoring program regularly on patient to ensure that the patient does not get gabapentin from another provider.

## DISCUSSION

Gabapentin was approved by the United States FDA for treatment of partial seizures as an adjunctive therapy in 1993 and for post herpetic neuralgia in 2004, but it has been used off label for treatment of other psychiatric diagnosis like social anxiety and depression<sup>7</sup>. It has also been used off label for treating symptoms of opiate and alcohol withdrawal and alcohol use disorder<sup>2,8</sup>. The initial thoughts surrounding the introduction of gabapentin into the market was that the abuse potential was very small<sup>1,2</sup>. Clinicians find gabapentin to be very useful, especially because of its titratable dosing that can range from 100mg to 3600mg daily. Unfortunately, a systemic review showed that more than half of individuals on a higher dose misuse the drug<sup>4</sup>. Because of the high number of abuse cases that were reported, gabapentin, just like

pregabalin, has been made a schedule V in some states like Tennessee, Michigan and others<sup>9</sup>. With the prevalence of abuse, more attention needs to be given to gabapentin when used along with other controlled substances like buprenorphine in the high-risk patient population<sup>3,4</sup>.

In reviewing the literature, it is evident that gabapentin can be used by inmates for “getting a high” that is like cocaine abuse<sup>6</sup>. Smith et. al published a review article on gabapentin abuse, citing eleven studies and 23 case reports of gabapentin abused alone or with other controlled substances. Some of the studies of interest to the readers include two studies on the abuse of gabapentin with methadone in Scotland, an online review of gabapentin and buprenorphine abuse, and a questionnaire about gabapentin being abused with oxycodone, buprenorphine and benzodiazepines<sup>6,13,14,15,16</sup>.

Gabapentin misuse among individuals is also concerning among the population that abuses opioids and buprenorphine. The reason for this is that gabapentin can increase the risk of accidental or intentional opioid overdose<sup>5,10</sup>. Opioids and buprenorphine have an analgesic effect by binding opioid receptors, opening potassium channels, and closing voltage dependent calcium channels. This increases the GABA transmission<sup>8,12</sup>. This suggests that gabapentin, opiates, and buprenorphine might have some shared mechanism of action which affects analgesia<sup>8,11</sup>.

For clinicians involved in the care of patients currently on buprenorphine, or patients with a history of opioid addiction, special attention should be paid to the use of gabapentin. While its clinical scope of application is currently very broad, further research will shed light on the abuse concerns of gabapentin when used in buprenorphine clinic.

**Notes**

**Potential conflicts of interest:** Authors declare no conflicts of interest.

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