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# A Case with Baclofen Withdrawal: Clinical Insights and the Need for Regulated Access

## Baklofen Yoksunluğu Sergileyen Bir Olgu: Klinik Görüşler ve İlaca Ulaşımın Düzenlenme İhtiyacı

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## Abstract

Substance use disorders (SUDs) significantly impact individuals' health and society, with prescription drug misuse, including baclofen, becoming an emerging concern. Baclofen, a GABA-B receptor agonist used for spasticity and off-label alcohol use disorder (AUD), carries risks of toxicity and severe withdrawal upon abrupt discontinuation. We present a case of a 31-year-old male with polysubstance abuse who escalated baclofen to 1000 mg/day, leading to dependence and withdrawal symptoms, including delirium and rhabdomyolysis. Treatment required baclofen reintroduction, benzodiazepines, antipsychotics, and supportive care. This case highlights baclofen's misuse potential, particularly in individuals with SUDs, and underscores the need for cautious prescribing and regulatory control, especially in regions where it is easily accessible without a prescription.

Keywords: Baclofen, substance use disorder, withdrawal, alcohol use disorder, prescription drug abuse

## Öz

Madde kullanım bozuklukları (MKB) bireylerin sağlığını ve toplumu önemli ölçüde etkilemekte, baklofen de dahil olmak üzere reçeteli ilaçların kötüye kullanımı yeni bir endişe kaynağı haline gelmektedir. Spastisite ve etiket dışı alkol kullanım bozukluğu (AUD) için kullanılan bir GABA-B reseptör agonisti olan baklofen, aniden kesildiğinde toksisite ve şiddetli yoksunluk riskleri taşır. Bu makalede, baklofeni 1000 mg/gün'e çıkaran, deliryum ve rabdomiyoliz dahil olmak üzere bağımlılık ve yoksunluk semptomlarına yol açan, çoklu madde kullanımı olan 31 yaşında bir erkek olgu sunulmuştur. Tedavi için baklofenin yeniden verilmesi, benzodiazepinler, antipsikotikler ve destekleyici bakım gerekmiştir. Bu vaka, özellikle SUD'li bireylerde baklofen'in kötüye kullanım potansiyelini vurgulamakta ve özellikle reçetesiz olarak kolayca erişilebildiği bölgelerde dikkatli reçeteleme ve düzenleyici kontrol ihtiyacının altını çizmektedir.

Anahtar kelimeler: Baklofen, madde kullanım bozukluğu, yoksunluk, alkol kullanım bozukluğu, reçeteli ilaç kötüye kullanımı

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# Introduction

Substance use disorders profoundly affect individuals' physical, psychological, and social well-being while also exerting significant socioeconomic burdens on society. Current global estimates indicate that approximately 284 million individuals use drugs, with cannabis and amphetamines being the most prevalent (1). Beyond illicit substances, the misuse of prescription medications—including benzodiazepines, opioids, stimulant and anabolic steroids, among others—has become increasingly concerning.

Baclofen, a derivative of β-(4-chlorophenyl)-γ-aminobutyric acid, functions as a GABA-B receptor agonist. Initially developed as an antiepileptic agent, it is now predominantly employed as a muscle relaxant in the management of spasticity. Baclofen is available in both oral and intrathecal formulations. Oral administration typically commences at low doses (e.g., 5 mg administered one to three times daily), with gradual titration up to a maximum of 80 mg per day; however, higher doses have been utilized off-label. In contrast, intrathecal administration yields therapeutic concentrations in the cerebrospinal fluid while maintaining minimal systemic exposure. Despite its therapeutic benefits, baclofen carries inherent risks. Non-therapeutic use may precipitate toxicity, presenting with symptoms such as hallucinations, confusion, nausea, sedation, seizures, or even death. Furthermore, abrupt discontinuation can trigger a withdrawal syndrome characterized by both psychiatric and physical manifestations, including anxiety, insomnia, tremors, and hemodynamic instability (2-9).

The first examples of baclofen abuse date back about 50 years (10). Although there has been a focus on baclofen abuse in the last 10 years, data on baclofen abuse are very limited. The available literature shows that there have been reports of abuse of baclofen, mostly suicides and suicide attempts. In a 2014 online survey conducted in Singapore, baclofen was identified as the fifth most commonly abused drug. Participants indicated that baclofen was chosen due to its similar efficacy to gamma-hydroxybutyric acid (GHB), despite causing more withdrawal symptoms. Additionally, it was noted that baclofen alleviated withdrawal symptoms related to the unavailability of GABAergic drugs such as gabapentin or pregabalin (11).

Notably, baclofen also exhibits anxiolytic properties and may attenuate alcohol cravings through the indirect inhibition of glutamate release. Lower doses (30–60 mg) appear to be more efficacious in the treatment of alcohol use disorder compared to higher doses (>60 mg), although its use for this indication is only approved in select countries, such as France (12-15).

Baclofen is prescribed in a variety of clinical situations, increasing the potential for its use. However, noncompliance with baclofen treatment can result in its abuse and withdrawal symptoms. This case report aims to discuss the management of a patient who abused baclofen and experienced withdrawal symptoms, as well as the precautions that should be taken when providing baclofen.

# Case

AB is a 31-year-old male with a longstanding history of substance use, including cannabis and alcohol, who presented to an outpatient treatment center with complaints of restlessness, diffuse bodily pain, insomnia, and significant distress. He reported ingesting 100 tablets of 10 mg baclofen daily (approximately 1000 mg/day) and noted a four-day lapse in consumption prior to presentation. During clinical evaluation, AB was observed engaging in self-directed speech, demonstrating poor personal hygiene, avoiding eye contact, and exhibiting disorganized thought processes primarily focused on acquiring baclofen. His mental status examination revealed clouded consciousness, impaired orientation to both time and place and deficits in immediate and recent memory, though remote memory remained intact. Additionally, he was markedly distractible, experienced visual hallucinations, and displayed moderate psychomotor agitation accompanied by motor restlessness despite preserved intellectual functioning.

His psychiatric history dates back to age 18 with the initiation of cannabis and alcohol use, followed by multiple hospitalizations for symptoms including irritability, insomnia, hallucinations, and episodes of toxic

alcohol consumption necessitating intensive care and resulting in legal complications. Hospitalizations were conducted based on the DSM-5 criteria for "Alcohol Use Disorder." Three years ago, after being diagnosed with lumbar disc herniation, AB was prescribed baclofen by a rehabilitation service. Observing improvements in pain management and decreased alcohol cravings, he independently escalated his baclofen dosage to 1000 mg/day. Despite numerous psychiatric interventions—comprising several outpatient visits and three inpatient hospitalizations with varied pharmacological strategies—his baclofen consumption persisted, culminating in substantial occupational and interpersonal dysfunction, including job loss, marital disintegration, and the imposition of legal guardianship due to his deteriorating lifestyle.

During his most recent presentation, AB was admitted to an inpatient unit specializing in alcohol and substance misuse for baclofen detoxification. No substance was detected in the urine toxicology and blood tests routinely performed in this clinic. In accordance with the treatment protocol, baclofen was immediately discontinued upon admission. Initial management included the administration of isotonic fluids and oral diazepam (15 mg/day), which only modestly alleviated his motor agitation. Subsequent baclofen cessation precipitated the onset of delirium, necessitating escalation of treatment to include normal saline (1500 cc/day), diazepam (15 mg/day), thiamine (20 mg/day), quetiapine (100 mg/day), and cyproheptadine (24 mg/day). Olanzapine (10 mg/day) orally disintegrating tablet form was included for agitation and psychotic symptoms related to delirium. Laboratory investigations revealed an elevated creatine kinase level (3242 U/L), prompting careful monitoring for rhabdomyolysis. Due to persistent withdrawal symptoms, baclofen was reintroduced at a dose of 80 mg/day, with a subsequent taper of 10 mg every two days. Over the following three days, AB's mental status gradually improved, with full restoration of orientation and resolution of visual hallucinations; by the fourth day, laboratory values had normalized. Ultimately, baclofen, thiamine, olanzapine, and diazepam were discontinued, while cyproheptadine, quetiapine, and fluid therapy were maintained. AB was discharged in remission, reporting no active complaints.

Informed consent form for case presentation was obtained from AB by providing detailed information about the disease and its treatment.

## Discussion

Although baclofen is a well-established therapeutic agent, its off-label use and potential for self-escalation underscore a significant risk for misuse. Baclofen misuse is defined as the consumption of the drug outside of established prescribing guidelines and recommended dosages, resulting in deleterious physical and psychological consequences. In AB's case, the progressive escalation of the baclofen dose, illicit acquisition, and ensuing withdrawal symptoms—combined with marked disruptions in both personal and occupational domains—are consistent with a substance use disorder as delineated by DSM-5 criteria (16).

The underlying pathophysiology of baclofen withdrawal is thought to involve the downregulation of GABA-B receptors consequent to chronic use; abrupt cessation leads to neural hyperactivity manifesting as agitation, delirium, seizures, and diffuse pain. While such withdrawal phenomena are more commonly associated with intrathecal administration, oral baclofen withdrawal may similarly engender severe clinical effects (8,17, 8). Management typically focuses on supportive care measures, including vigilant monitoring of vital signs, aggressive hydration to forestall rhabdomyolysis, and the administration of benzodiazepines—such as diazepam—to modulate GABA-A receptor activity and ameliorate withdrawal symptoms (9). In the present case, however, these measures proved insufficient, necessitating the re-initiation of baclofen at the maximum licensed dose followed by a gradual taper. Moreover, cyproheptadine—a first-generation antihistamine with serotonin antagonist properties—was employed as an adjunctive treatment to counteract the abrupt increase in serotonergic activity associated with baclofen withdrawal (19,20). This multifaceted treatment approach, combining fluid therapy, diazepam, cyproheptadine, and a controlled baclofen taper, ultimately resulted in the resolution of the withdrawal syndrome.

It is also noteworthy that, despite contributing to severe withdrawal phenomena, the escalation of baclofen dosage in AB's case appeared to correlate with a reduction in alcohol consumption. Over time, his alcohol

use remitted entirely—a phenomenon documented in other cases wherein baclofen's anti-craving properties facilitate remission in alcohol use disorder (14). Reports from France, where baclofen is approved for the treatment of alcohol use disorder, have similarly noted instances of misuse and dose escalation, thereby highlighting a potential public health concern regarding its accessibility (21).

## Conclusion

In Türkiye, baclofen is readily available from pharmacies without a prescription—a stark contrast to the stringent dispensing regulations applied to most other medications—rendering it particularly vulnerable to misuse. This case report, which may represent the first documented instance of baclofen use disorder in Türkiye, underscores the inherent risks associated with its off-label use. Although baclofen retains valuable therapeutic applications, its misuse can precipitate significant adverse health outcomes, including potentially life-threatening withdrawal syndromes. Consequently, physicians and pharmacists must exercise heightened caution when prescribing and dispensing baclofen. Furthermore, targeted public health campaigns must be implemented to mitigate the risks associated with the abuse of prescription medications.

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