Bupropion for Treatment of Depression and Narcolepsy in a Postpartum Patient

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Narcolepsy is a chronic neurological sleep disorder characterized by excessive daytime sleepiness, cataplexy, sleep paralysis, hypnagogic hallucinations, and disrupted nocturnal sleep resulting from autoimmune destruction of orexin-producing neurons in the lateral hypothalamus.[1–5] Orexin, or hypocretin, is a complex neuropeptide responsible for the regulation of sleep-wake cycles and muscle tone. Autoimmune neuronal damage may result in orexin deficiency and associated daytime sleepiness and cataplexy.[2,4,5] Large cohort studies and meta-analyses report a high prevalence of depression in narcoleptic patients, suggesting comorbidity rates of 30%–38%.[6–8] Overlapping depressive symptoms, including cognitive impairment and fatigue, have demonstrated a significant association with narcolepsy severity.[9] Postpartum depression (PPD), a mood disorder emerging within months after childbirth, involves low mood, sleep disturbances, and impaired functioning, often exacerbated by hormonal changes and newborn care.[10,11] Bupropion, a norepinephrine-dopamine reuptake inhibitor (NDRI), is an atypical antidepressant commonly prescribed due to its favorable side effect profile, including a reduction in somnolence and weight gain as compared to traditional antidepressants.[12] These unique features make bupropion an effective and well-tolerated treatment option in PPD, specifically.[10] Interestingly, bupropion has been used off-label to treat cataplexy in narcolepsy patients with some success.[12,13] A previous case report demonstrated improvements in both mood and narcoleptic symptoms in a narcolepsy patient presenting with atypical depression.[14] The present case is the first, to our knowledge, to present bupropion as an effective pharmacologic therapy for narcolepsy with cataplexy in PPD.

Case Report

A 21-year-old woman with a history of narcolepsy diagnosed at age 19 and depression since age 13 was admitted to the inpatient psychiatric unit due to suicidal ideation. Her narcolepsy, characterized by 12–15 daily sleep attacks and cataplexy, began in the fifth grade. Initial treatment with Adderall was ineffective, and modafinil provided some benefit until being discontinued during pregnancy. Postpartum sleep attacks ranged from 7 to 10 per day.

At admission, she reported increased sleep, crying spells, and anhedonia, with suicidal thoughts and a plan to overdose or cut herself, amid relationship stressors. Her depression, exacerbated postpartum, also included low energy and impaired sleep.

During hospitalization, bupropion was initiated and increased to 300 mg, targeting both depression and narcolepsy. This led to significant mood improvement and, notably, the cessation of sleep attacks for 48 hours prior to discharge. She was discharged home with improved mood and no sleep attacks, returning to her baseline level of functioning.

Discussion

This case describes a 21-year-old woman with chronic narcolepsy and comorbid PPD. Pharmacologic management of narcolepsy traditionally includes stimulants like modafinil and amphetamines, which improve wakefulness but do not target mood.[15] The patient's lack of response to Adderall and partial benefit from modafinil reflect this challenge.

Bupropion, an NDRI, has demonstrated off-label efficacy in reducing cataplexy and excessive daytime sleepiness.[16] Bupropion's antidepressant effects, particularly in addressing anhedonia and low energy, might make it a valuable option in patients with depression and narcolepsy. This dual benefit is supported by case series and small studies suggesting bupropion's utility in managing both conditions.[17]

Clinically, this case underscores the importance of a multidisciplinary approach, integrating sleep medicine, psychiatry, and obstetric care to optimize outcomes in patients with narcolepsy and mood disorders, especially during pregnancy and postpartum. It also highlights the need for individualized treatment plans that consider both neurological and psychiatric symptoms.

Improvement in this case was only observed over 48 hours, and as such, it cannot be concluded that there was sustained benefit for this patient's narcolepsy. However, the magnitude of the improvement after initiation of bupropion extended release was noteworthy and suggests a possible effect. Further studies are needed to determine whether improvement can be sustained and accurately attributed to the treatment and to evaluate its role as a potential therapeutic option

in similar cases, especially those in which stimulants and serotonergic antidepressants have been insufficient or poorly tolerated.

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