

CASE REPORT

## Zolpidem and Amnestic Sleep Related Eating Disorder

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Nocturnal eating disorders are more common than previously thought. Sleep related eating disorder has been described in association with zolpidem. A review of the literature revealed the presence of 6 previously reported cases. In this presentation, the case of a 46-year-old female who developed sleep related eating disorder when she was treated with zolpidem for insomnia is reported. The patient recovered totally when

zolpidem was stopped. Drug-induced sleep related eating disorders should be considered when evaluating patients with nocturnal eating.

**Keywords:** sleep related eating disorder, parasomnia, zolpidem, eszopiclone.

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### INTRODUCTION

In the last 2 decades, increasing attention has been paid to patients who present to sleep clinics with nocturnal eating.<sup>1</sup> Some of these patients have nocturnal eating as a symptom of a diurnal eating disorder. Another group of patients have nocturnal eating as a result of an eating disorder that presents predominantly during sleep. These patients generally complain of insomnia and are fully awake during their nocturnal eating episodes. Some of these patients have associated psychiatric illnesses and may be on psychoactive drugs. A third category of eating disorders includes sleep related eating disorder. Patients with this condition frequently are amnestic completely or partially to the eating episode which occurs during NREM sleep. This report describes the case of a patient who developed sleep related eating disorder as a result of treatment with zolpidem. Remission was complete after stopping zolpidem. Sleep related eating episodes did not recur when the patient was subsequently treated with eszopiclone.

### CASE REPORT

A 46-year-old female was referred for evaluation of obstructive sleep apnea. She has a history of depression and insomnia for which she received treatment with controlled-release zolpidem 6.25 mg a day. She took this medication for approximately one year. After 3 weeks of taking zolpidem, she developed episodes of nocturnal eating. These episodes occurred almost every night after 1 to 1½ hours of sleep onset. The patient would leave her bedroom to go to her kitchen which is located in a lower level

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of her house. She typically warmed up leftovers and ate them, usually leaving the area messy. She had total amnesia or partial recall of these episodes. The patient gained approximately 50 pounds and developed snoring. Because of this, she was referred to our center for evaluation. Prior to her referral, zolpidem was stopped and the patient was started on eszopiclone. After zolpidem was stopped, nocturnal eating behavior stopped completely. Despite treatment with eszopiclone, she did not have recurrence. Our evaluation showed that the patient had mild obstructive sleep apnea, for which she received treatment with continuous positive airway pressuer( CPAP). The patient had a history of depression, hypothyroidism, and hypertension and took trazodone, paroxetine, lamotrigine, levothyroxine, nadolol, and aspirin. She did not have personal history of parasomnia, however, she has relatives who sleepwalked in childhood. The patient's overnight polysomnogram showed decreased slow wave sleep and REM sleep and increased stage 1 and stage 2 sleep. Sleep latency and sleep efficiency were both normal.

This case shows a clear temporal association between the use of zolpidem and sleep related eating disorder which started immediately after the patient was put on zolpidem and ceased immediately after it was stopped. Surprisingly, her eating disorder did not recur when treated with eszopiclone. This case is consistent with the typical clinical features of sleep related eating disorder, including the common occurrence in females, association with mood disorders, as well as its common occurrence in patients who take psychoactive drugs. A somewhat unusual feature of this case is that the patient gained 50 pounds over a one-year period resulting in the development of obstructive sleep apnea, although she may have had sleep apnea before her weight gain. Throughout the course of her treatment with zolpidem, thyroid stimulating hormone levels were tested every 6 months and were normal.

### DISCUSSION

A review of the literature shows that drug-induced sleep related eating disorder has been described especially in association with zolpidem. A report by Morgenthaler and Silber showed that zolpidem induced an amnestic sleep related eating disorder in 5 pa-

tients.<sup>2</sup> Three patients developed a new onset sleep related eating disorder; the other 2 became worse and amnesic to their nocturnal eating. The authors emphasized the importance of the association between insomnia and nocturnal eating, disorders of arousal, and sleep related eating disorder, and the association between zolpidem and nocturnal somnambulism and sleep related eating disorder.

In another report a patient developed nocturnal sleep eating after he was treated with zolpidem for insomnia.<sup>3</sup> After discontinuing zolpidem, sleepwalking and nocturnal eating stopped.

Winkelman reported a series of 23 patients with sleep related eating disorder.<sup>4</sup> The majority of these patients were females. Most were on psychotropic medications; in the majority of the patients, nocturnal eating occurred on a nightly basis from 1 to 6 times per night. Most patients reported that they were “mostly asleep” or “half awake, half asleep” during the episode of nocturnal eating. Polysomnography showed that all eating episodes occurred in the setting of EEG-defined wakefulness. This study showed that clonazepam led to permanent improvement in some patients, that one patient worsened with clomipramine, and another patient worsened with phenelzine. Approximately 25% of patients had periodic limb movements of sleep. It was suggested that periodic limb movements induced arousals from slow wave sleep with subsequent nocturnal eating. Treatment with levodopa was one of the most successful treatments for this disorder. In this report it was hypothesized that a stimulus that can be internally generated such as periodic limb movements may produce a partial arousal which may occur at the right time; i.e., during slow wave sleep, in a predisposed individual, leading to sleep related eating.

Manni et al. studied 120 patients with insomnia for the possibility of pathological nocturnal eating.<sup>5</sup> They recognized 18 patients with pathological eating disorders and categorized these patients into 3 groups. The first group consisted of patients with nocturnal eating syndrome. The second group of patients had binge eating disorder associated with nocturnal bingeing. The third group of patients were described as having “aspecific nocturnal eating.” Manni et al. emphasized that pathological nocturnal eating is underestimated and that the prevalence of nocturnal eating syndrome is unknown and is likely to be more common than currently thought. In this study, nocturnal eating syndrome was found to exist with restless legs syndrome and with psychological abnormalities, specifically personality and mood disorders.

Recently Vetrugno et al. reported a series of patients with sleep related eating disorder.<sup>6</sup> This report emphasizes the frequent occurrence of restless leg syndrome and periodic limb movements and argues that the presence of periodic limb movements during sleep and the efficacy of dopaminergic medications in treating sleep related eating disorder suggests that nocturnal eating may be due to a dopaminergic dysfunction in the central nervous system.

This report supports prior findings that the use of zolpidem should be considered as a possible precipitating factor in patients who present with sleep related eating disorder.

It is unknown why nocturnal eating was not induced by eszopiclone, although its activity on gamma-aminobutyric acid receptor or its subunits may be different compared to zolpidem.

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