

Quetiapine-induced sleep-related eating disorder: a CASE REPORT

Sharmilla Kanagasundram¹

¹Universiti Malaya

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Abstract

This is the first case report of 2 depressed Malay females prescribed quetiapine, the first developed sleep related eating disorder (SRED) on 200 mg per day and the second at 50 mg per day. Both resolved with discontinuation. Assessment for SRED should be done at every follow up.

Introduction

Slow wave sleep (SWS) is deep sleep and occurs in the non-rapid eye movement (NREM) stages 3 and 4^[1]. Frequent arousals during this stage leads to sleep walking (SW)^[2]. SW and SRED are 2 separate entities but both are classified as parasomnias^[3]. Serotonin receptors are involved in maintaining sleep and causing muscle hypotonia during sleep^[2]. Atypical antipsychotics are commonly used in psychiatric and primary care practice and place patients at risk of parasomnias such as SRED and this condition may go undetected especially among psychotic patients where it may be mistaken for psychosis^[2]. Quetiapine, olanzapine, chlorpromazine and clozapine which act through serotonin receptors are often used off label to aid in sleep^[3]. Medication induced SW and SRED have been reported with quetiapine being the most implicated^[4]. The prevalence of SRED in the adult psychiatric population ranges from 1-5%^[5]. Prevalence of SW is 6.9%^[6]. Both conditions are little discussed during follow up visits and are generally not detected^[1, 2].

Quetiapine^[2,5,7,8,9], olanzapine^[2] and other atypical antipsychotic medications^[2], have been associated with SW and have been reported to be associated SRED. It is important to discuss this potential adverse effect with patients of these medications to prevent injuries and weight gain in the patient.

Case 1

A 26-year-old Malay female presented, with complaints of depressive symptoms for a year. She had been started initially on duloxetine which was titrated up to a dose of 60 mg. 2 mg of clonazepam was added but she could not sleep with clonazepam, and her depressive symptoms were also poorly controlled, hence quetiapine was added to aid in sleep and increase the antidepressant effects. The dose of quetiapine was gradually titrated up to 200mg at bedtime over 6 months. The diagnosis of SRED was mainly clinical. The patient walked with her eyes open, walked and ate and had no memory of the event. She ate junk food from the refrigerator while sleeping three to four nights per week. She even cut a mango before eating it. The patient could not remember any of these events after awakening. She put on 11 kg during the 6 months. This patient had no previous history of sleep walking. Quetiapine was tapered down and olanzapine 5 mg was substituted. On olanzapine 5 mg the frequency of SRED decreased but it did not go away completely. Hence the olanzapine was stopped, and clonazepam was changed to 10 mg zolpidem after which the patient could sleep. Resolution of SRED after stopping quetiapine and its relapse after introduction of olanzapine in this case confirms the role of olanzapine 5 mg/day in precipitating SRED episodes. Her physical examination was unremarkable except for an elevated BMI of 34.11kg/m². For her depressive symptoms lithium was added.

Case 2

A 23 year old Malay woman diagnosed as case of schizo affective disorder depressive subtype with current minimal psychosis was prescribed quetiapine 25 mg/day and increased to 50 mg daily. At the dose of quetiapine 50 mg/day she developed SRED. The quetiapine was stopped and substituted with aripiprazole 5 mg with no further episodes. Her concurrent medication were desvenlafaxine 100 mg daily and lithium 300 mg ON. During the 5 months that the patient experienced SRED she put on 5 kg. Physical examination was unremarkable. It was the same treating doctor for both cases and hence the side effect in the second case was identified earlier and a more appropriate drug was administered. Unlike in the first case the second patient did not continue to have SRED as aripiprazole and not olanzapine was used as the substitute drug.

Both cases have insignificant medical history, with no history of sleep walking, seizure, childhood or family history of parasomnia or alcohol abuse. Both patients were unaware of their actions of eating while asleep until informed by family.

Discussion

SRED affects both the genders, ages ranging from 18^[9] to 75 years^[7]. Onset of SRED was two days^[8]. to a few months after starting quetiapine. SRED appeared to occur more amongst the patients suffering from mood disorder rather than schizophrenia. Most of the time the cessation was brought about by stopping the antipsychotic. In one case clonazepam^[2]. was added and in another promethazine^[7] was added. SRED occurred at doses as low as 25 mg of quetiapine^[7] and as in CASE 1, 5 mg of olanzapine. It appeared to be dose dependent as reducing the dose in some cases helped in the cessation of the problem. Switching to olanzapine in case 1 did not help but in case 2 switching to aripiprazole resolved the SRED. Possibly there are different mechanism at work.

The mechanism for quetiapine induced SRED may be explained by the serotonin hypothesis of parasomnia^[5]. Quetiapine causes:

- 5HT_{2A} receptor antagonism and 5HT_{1A} agonism ^[4].
- Blockage at 5 HT 2A in the dorsal raphe nucleus inhibits sleep and leads to partial arousal. Blockage of serotonin input can decrease normal motor inhibition, enabling the person to walk and perform other physical activities ^[5]. This dissociation between both the state of partial arousal and muscle hypotonia, enables sleep walking ^[2,10]. SRED is precipitated more commonly in quetiapine and at lower doses, compared to other antipsychotics ^[7, 11].
- Antagonism of the serotonin receptor 5HT_{2C} in the hypothalamus, increases appetite leading to food intake and weight gain^[12].
- Patients who are on antipsychotics and gaining weight were found to have associated elevated leptin levels ^[13].

Strengths:

Both patients had good medication adherence and premorbid function.

There were no comorbidities, concomitant medications than what is mentioned, no previous history of parasomnia, head injury or epilepsy.

Limitations:

Serum quetiapine was never assessed.

The frequency and nature of food, timing of the SRED not well documented as this is a retrospective observation.

Conclusion

SRED can occur at low doses of quetiapine. Possible SRED should be informed to the patient and assessed at follow ups. Further research is necessary in assessing prevalence of SRED amongst various antipsychotics

and similarities and differences amongst antipsychotics in causing SRED as well as specific patient factors.

References

1. Bharadwaj R, Kumar S. Somnambulism: diagnosis and treatment. *Indian journal of psychiatry* 2007; 49: 123.
- 2 Seeman MV. Sleepwalking, a possible side effect of antipsychotic medication. *Psychiatric Quarterly* 2011; 82: 59-67.
3. Gupta R., Das S, Gujar K., Mishra K. K., Gaur, N, & Majid A. Clinical Practice Guidelines for Sleep Disorders. *Indian journal of psychiatry* 2017; 59(Suppl 1), S116–S138. doi:10.4103/0019-5545.196978 .
4. Das S, Gupta R, Dhyan M, Sah D, Maity J. Role of 5HT1A and 5HT2A receptors and default mode network in olanzapine-induced somnambulism. *Neurology India* 2017; 65: 373-4.
5. Tamanna, S, Ullah M I, Pope C. R., Holloman G, & Koch C A. Quetiapine-induced sleep-related eating disorder-like behavior: a case series. *Journal of medical case reports* 2012; 6: 380. doi:10.1186/1752-1947-6-380.
6. Stallman HM, Kohler M. Prevalence of sleepwalking: a systematic review and meta-analysis. *PloS one* 2016; 11: e0164769.
7. Raja M, Raja S. Sleepwalking in four patients treated with quetiapine. *Psychiatria Danubina* 2013; 25:80-83.
8. Heathman JC, Neal DW, Thomas CR. Sleep-related eating disorder associated with quetiapine. *Journal of clinical psychopharmacology* 2014; 34: 658-60.
9. Hafeez ZH, Kalinowski CM. Somnambulism induced by quetiapine: two case reports and a review of the literature. *CNS Spectrums* 2007; 12: 910-2.
10. Mahowald MW, Schenck CH. Insights from studying human sleep disorders. *Nature* 2005; 437:1279-85.
11. Kolivakis TT, Margolese HC, Beauclair L, Chouinard G. Olanzapine-induced somnambulism. *Am J Psychiatry* 2001;158:1158.
12. Daniel D Lam, Alastair S Garfield, Oliver J Marston, Jill Shaw, Lora K Heisler. Brain serotonin system in the coordination of food intake and body weight. *Pharmacology Biochemistry and Behavior* 2010; Volume 97, 1:84-91.
13. Lee AK, Bishop JR. Pharmacogenetics of leptin in antipsychotic-associated weight gain and obesity-related complications. *Pharmacogenomics*. 2011;12(7):999-1016. doi:10.2217/pgs.11.45