

# Zolpidem at Supratherapeutic Doses can Cause Drug Abuse, Dependence and Withdrawal Seizure

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## Abstract

Zolpidem is a non-benzodiazepine hypnotic drug, acts selectively through omega 1 receptors of GABA<sub>A</sub>. It is thought to be safer than benzodiazepines but we report a case of zolpidem drug abuse, dependence and withdrawal seizure. ©

## INTRODUCTION

Zolpidem is a non-benzodiazepine, which acts through binding to benzodiazepines receptors. It is a hypnotic drug that is commonly prescribed for short-term insomnia. It acts selectively through omega 1 receptors of GABA<sub>A</sub>. It is thought to be safer drug than benzodiazepines because it does not cause drug abuse, dependence and withdrawal syndrome.<sup>1</sup> Here we report a case with zolpidem abuse, dependence and withdrawal seizure on supratherapeutic dose.

## CASE SUMMARY

A 42 years businessman used to have panic attacks while traveling by air. One and half years back he was prescribed tab. zolpidem 10 mg before boarding the flight so that he could go off to sleep. He was a frequent flyer so he had to take the drug frequently. Over the period he himself increased the dose up to 40-50mg before each flight and then started taking daily in the doses up to 200 mg per day and developed drug dependence. In last month he decided to deaddict himself and gradually reduced the doses to 50mg per day. One day he did not take zolpidem before flight because he wanted to get rid of the drug. As he reached home after 48 hours without zolpidem, he had an episode of convulsion. He was admitted to a hospital, phenytoin sodium was given in loading dose and he then received maintenance doses of 300mg per day. His investigations including hemogram and routine serum chemistry were normal. MRI brain did not show any lesion and EEG revealed spikes and wave discharges. Postictally, he was drowsy and confused from which he recovered within few hours. Because he was feeling restlessness, zolpidem

was re-instituted in dose of 20mg per day and then gradually tapered over few days during hospitalization. At the time of discharge he was on phenytoin sodium 300 mg per day.

## DISCUSSION

This patient was taking zolpidem frequently for long time and in supratherapeutic doses and he became dependant on it. He had a withdrawal seizure after 48 hours of its abstinence. Other than drug withdrawal there was no other explanation for the seizure. He did not have past history of any seizure and head injury, he was not taking any other drug that could cause seizure, and MRI brain was normal. During withdrawal period he was very restless and required zolpidem again to get relief.

This report highlights the fact that zolpidem has drug abuse potential and dependence liability. Sudden withdrawal from supratherapeutic doses may precipitate an epileptic seizure as a part of withdrawal syndrome. The possible explanation is that at supratherapeutic doses it may also act non-selectively to omega 2 receptors of GABA<sub>A</sub>, like benzodiazepines and may result into withdrawal seizure. On electronic database search we could find only six cases of zolpidem withdrawal seizures.<sup>2-7</sup> All the patients were on supratherapeutic doses of zolpidem and were dependant on the substance.

The recommended dose of zolpidem for insomnia is 10 mg before going to bed for 7-10 days. This patient was taking 50 to 200 mg of zolpidem every day. In previous case reports of zolpidem withdrawal seizures, supratherapeutic doses ranging from 130 mg to 600 mg per day have been reported.<sup>2,3,5</sup>

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