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Using Benzodiazepines And Z-Drugs in The Management of Insomina, A Brief Review

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ABSTRACT

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Introduction

Insomnia as the most common disorder of sleep, can be classified as primary and secondary. In primary insomnia there are problems in the brain sleep mechanisms while in secondary insomnia, physical disorders, psychiatric diseases, drug use, and chronic pain can cause the problem. Promotion of sleep can become possible by using hypnotics. Chloral hydrate, barbiturates, chlormethiazole, benzodiazepines and Z-drugs are among hypnotic drugs. Benzodiazepines and Z-drugs are most commonly used as hypnotics. GABA-mediated inhibition enhancement in the CNS [1], would cause various actions of the benzodiazepines. GABA-A receptors in the CNS have modulatory sites which one of such modulatory sites is for benzodiazepines. When such modulatory site is activated, it causes GABA receptor's conformational change and it results in increasing in the GABA binding affinity and enhancing in the GABA actions on the conduction of the Cl in the membrane of the neurons [2]. Benzodiazepines can induce sleep. Some of them which possess a rapid elimination property like temazepam, are preferred clinically when avoiding daytime sedation would be a goal in the treatment.

Drowsiness, ataxia, alertness impairment and dependence are among the side effects of using benzodiazepines. Sudden stop in taking benzodiazepines, causes physical withdrawal syndrome to appear which shows itself with some symptoms like insomnia, anxiety, etc. Z-drugs are agonists for benzodiazepines receptor [3,4]. Their structure is different from the structure of the benzodiazepines. Their half-lives are shorter and daytime sedation with taking them is less likely to happen in comparison with benzodiazepines. Withdrawal and tolerance are also less likely to happen with Z-drugs in comparison with benzodiazepines. Zaleplon, zopiclone and zolpidem are some examples of these drugs. In the management of insomnia, Z-drugs are becoming more popular. Benzodiazepines and Z-drugs are two important categories of medications to use in the management of insomnia [5]. Healthcare professionals who are dealing with the patients with insomnia should have enough knowledge about these two important categories of medications which are used in the treatment of insomnia during clinical practice.

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