EFFECTS OF BENZODIAZEPINES AND NONBENZODIAZEPINES ON SLEEP QUALITY: A SYSTEMATIC REVIEW

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OBJECTIVES

To characterize the impact that benzodiazepine and non-benzodiazepine hypnotic molecules have on sleep architecture and structure, either subjectively through psychometric scales or through exams such as polysomnography.

BACKGROUND

Insomnia is a very prevalent medical condition, the incidence of which increases in older people. Pharmacological treatments are used in a large number of cases, among which are the drugs that bind to the GABAA (Type A gamma-aminobutyric acid)receptor. The effects of these drugs on sleep quality remains controversial.

MATERIALS AND METHODS

The bibliographic search was performed using the terms “sleep” and “benzodiazepines” and “quality” in the databases MEDLINE (Medical Literature Analysis and Retrieval System Online), SciELO (Scientific Electronic Library Online) and Embase (Excerpta Medica dataBASE). Works prior to 1985 were excluded.

RESULTS AND CONCLUSIONS

After screening 1401 citations, 17 studies were included. Four studies evaluated sleep quality perceived by patients, with benzodiazepine users having worse scores than nonusers. Five other papers dealt with changes in polysomnography and detect a marked reduction of arousals associated with increased number of nocturnal awakenings without relevant modifications of sleep macroarchitecture. Users registered an increase stage 2, decrease stages 3 and 4, and interfere with the production of slow-wave sleep, especially after repeated administration. Alternatively, the nonbenzodiazepine BzRAs (Benzodiazepine receptor agonists, frequently referred to as the Z-drugs) do not seem to consistently alter sleep stages. Although the short-term benefit of benzodiazepine use on sleep continuity is well documented, these drugs do not normalize sleep.

FIRST AUTHOR	YEAR	TITLE	JOURNAL
Bastien, C. H.	2003	Sleep EEG power spectra, insomnia, and chronic use of benzodiazepines(6)	Sleep
Beland, S. G.	2010	Benzodiazepine use and quality of sleep in the community-dwelling elderly population(7)	Aging Ment Health
Bourgeois, J.	2013	Sleep quality of benzodiazepine users in nursing homes: a comparative study with nonusers(8)	Sleep Med
Bourgeois, J.	2014	One-year evolution of sleep quality in older users of benzodiazepines: a longitudinal cohort study in belgian nursing home residents(9)	Drugs Aging
Chen, L.	2016	The association between benzodiazepine use and sleep quality in residential aged care facilities: a cross-sectional study(10)	BMC Geriatr
Hein, M.	2018	Objective sleep alterations and long-term use of short or intermediate half-life benzodiazepine receptor agonists are risk factors for high blood pressure in individuals with insomnia: a study in 1272 individuals referred for sleep examinations(11)	Sleep Med
Holbrook, A. M.	2000	Meta-analysis of benzodiazepine use in the treatment of insomnia(5)	CMAJ
Huedo-Medina, T. B.	2012	Effectiveness of non-benzodiazepine hypnotics in treatment of adult insomnia: meta-analysis of data submitted to the Food and Drug Administration(12)	BMJ
Kanji, S.	2016	Pharmacological interventions to improve sleep in hospitalised adults: a systematic review(13)	BMJ Open
Manconi, M.	2017	Sleep architecture in insomniacs with severe benzodiazepine abuse(14)	Clin Neurophysiol
Mazza, M.	2014	Polysomnographic findings in a cohort of chronic insomnia patients with benzodiazepine abuse(15)	J Clin Sleep Med
Mellinger, G. D.	1985	Insomnia and its treatment. Prevalence and correlates(1)	Arch Gen Psychiatry
Riemann, D.	2017	European guideline for the diagnosis and treatment of insomnia(2)	J Sleep Res
Schroeck, J. L.	2016	Review of Safety and Efficacy of Sleep Medicines in Older Adults(16)	Clin Ther
Wagner, J.	2000	Non-benzodiazepines for the treatment of insomnia(4)	Sleep Med Rev
Wick, J. Y.	2013	The history of benzodiazepines(3)	Consult Pharm

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