



Acta Psychiatrica Scandinavica / Volume 138, Issue 2

Original Article |  [Free Access](#) |

The risk of Alzheimer's disease associated with benzodiazepines and related drugs: a nested case-control study

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First published: 31 May 2018

<https://doi.org/10.1111/acps.12909>

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Abstract

Objective

To assess the association between benzodiazepine and related drug (BZDR) use and risk of Alzheimer's disease (AD) with cumulative consumption and duration of use based models.

Method

A nationwide nested case-control study of all Finnish community-dwelling persons who received clinically verified AD diagnosis in 2005–2011 ($N = 70\,719$) and their matched controls ($N = 282\,862$). AD diagnosis was based on DSM-IV and NINCDS-ADRDA criteria. BZDR purchases were extracted from the Prescription Register since 1995. The association between BZDR use and AD was assessed using conditional logistic regression with 5-year lag time between exposure and outcome.

Benzodiazepine and related drug use was associated with modestly increased risk of AD (adjusted OR 1.06, 95% CI 1.04–1.08). A dose–response relationship was observed with both cumulative consumption and duration. Adjustment for other psychotropics removed the cumulative dose–response relationship by attenuating the ORs in the highest dose category.

Conclusion

Benzodiazepine and related drug use in general was associated with modestly increased risk of AD. No major differences were observed between different subcategories of BZDRs (i.e. benzodiazepines, Z drugs, short-/medium-acting or long-acting BZDRs). As dose–response relationship abolished after adjustment for other psychotropics, it is possible that the association may partially be due to antidepressants and/or antipsychotics, or concomitant use of these medications.

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