

# Benzodiazepines and older people

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*There is a high prevalence of benzodiazepine use among elderly persons despite the fact that this sector of the population is particularly susceptible to the adverse effects of these medicines. Short half-life benzodiazepines are usually preferred for chronic use in older adults because they do not accumulate in the body, although they have a higher potential for dependence and are more strongly associated with withdrawal symptoms. A review of the literature confirms that benzodiazepines should be prescribed with caution, at low doses and for short periods.*

Benzodiazepines are often prescribed for elderly patients as hypnotics and anxiolytics. Several problems associated with benzodiazepine use in this patient population are well documented and therefore the topic merits particular attention.

## Key concerns

With advancing age, elderly persons are more sensitive to the potential side effects of benzodiazepines because of altered pharmacokinetics and pharmacodynamics. Numerous studies of benzodiazepine kinetics have been conducted and have shown that alterations in the distribution and elimination of these agents occur among older patients. Benzodiazepines with longer half-lives, such as chlordiazepoxide, diazepam, and flurazepam, are more likely to accumulate in the body and cause prolonged sedation.<sup>1</sup> Furthermore, alterations in pharmacodynamics among elderly patients can be more important in explaining the altered response to benzodiazepines. The increased sensitivity of older people to benzodiazepines is due to age-related alterations in the central nervous system receptors.<sup>2</sup>

The use of benzodiazepines among elderly patients has been associated with intellectual and cognitive impairment. Cognitive impairment is characterized by anterograde amnesia, diminished short-term recall and increased forgetfulness. These symptoms are consistent with the early stages of dementia and can lead to a false diagnosis. Cognitive impairment seems to develop insidiously as a late complication of benzodiazepine use and is most commonly associated with long-acting benzodiazepines. Elderly patients with cognitive impairment show improved functioning once the drug has been discontinued.<sup>3</sup>

Benzodiazepines may contribute to psychomotor impairment and increase the risk of falls and automobile accidents. Psychomotor impairment is characterized by slowed reaction time and diminished speed and accuracy of motor tasks. Several studies show evidence of an increased risk of hip fracture and recurrent falls among elderly patients taking benzodiazepines. The risk of falls has been associated with sudden increases in dosage and with continuous use of benzodiazepines.<sup>4</sup>

Benzodiazepine dependence is a serious problem among elderly persons. Factors potentially associated with an increased risk of developing dependency include long-term use, short duration of action, high dose, high potency, alcohol or other drug dependency and personality disorders.<sup>5</sup>

## Appropriate prescribing

It is generally advised that, if benzodiazepines are used in the elderly, they should be prescribed half the recommended dose of adults. Benzodiazepines used as hypnotics include nitrazepam which has a prolonged action and may give rise to residual effects the following day, with repeated doses tending to be cumulative. More appropriate options are lormetazepam and temazepam which act for a shorter time and have little or no hangover effect. Alternative hypnotics are the Z drugs e.g. zolpidem which are non-benzodiazepine hypnotics, but act on the benzodiazepine receptors. The Z drugs were developed with the aim of overcoming some of the disadvantages of benzodiazepines but available evidence has not clearly shown these benefits.

In fact NICE guidance on the use of Z drugs recommends that because of the lack of evidence to distinguish between these agents and the short-acting benzodiazepine hypnotics, the drug with the lower purchase cost for the patient should be prescribed.<sup>6</sup>

Benzodiazepines can be effective in alleviating anxiety states. Although these drugs are often prescribed to patients with stress-related symptoms, unhappiness or physical disease, their use in many situations is unjustified. In particular, they are not appropriate for treating depression or chronic psychosis.<sup>7</sup> All benzodiazepines work well in anxiety, however, elderly people respond better and experience fewer adverse effects with short or intermediate-acting agents such as lorazepam than with longer acting ones such as diazepam. Occasionally, short-acting agents produce a rebound anxiety effect before the next dose is given. In such cases, a longer acting drug may be preferred.<sup>8</sup>

## Reducing use

Benzodiazepine treatment should be limited to the lowest possible dose for the shortest possible time. Stopping the drug is easier if clinicians and pharmacists clarify from the outset that treatment is only for a brief definite period. After continuous use for an extended time, benzodiazepines may be difficult to stop because of psychological and physical reasons. Nevertheless, periodic efforts should be made to stop the drug or at least reduce the dose. Withdrawal should be gradual because abrupt withdrawal may produce confusion, toxic psychosis, convulsions or a condition resembling delirium tremens. Abrupt discontinuation of short-acting benzodiazepines may produce a more severe withdrawal than long-acting agents.<sup>9</sup>

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Symptoms may develop at any time up to 3 weeks after stopping a long-acting benzodiazepine, but may occur within a few hours in the case of a short-acting one. The British National Formulary includes a suggested withdrawal protocol involving transfer to an equivalent dose of diazepam and slowly reducing the dose. This may help those patients who experience symptoms when reducing their intake of original benzodiazepine.<sup>7</sup> Gradual tapering of benzodiazepines has been shown to be at least as effective among elderly patients as among younger patients. Schweizer and colleagues<sup>10</sup> compared the severity of withdrawal symptoms and clinical outcomes in a matched sample of elderly and young patients. The elderly patients showed significantly less severe withdrawal symptoms during a gradual taper and did equally well in terms of outcomes as their younger counterparts. The authors speculated that a slower clearance of the medication may attenuate withdrawal symptoms and that diminished neuronal capacity among elderly persons causes less rebound overactivity.

## Conclusion

When prescribing benzodiazepines for older people, careful consideration should be given to minimizing doses and duration of treatment. Medication reviews are particularly important in this sector of the population when decreasing doses or discontinuing drugs which are no longer appropriate for the patient. Moreover, effective communication with the patient and carers is imperative since resistance to withdrawing these agents is often encountered. ☐

## References

1. Bailey L, Ward M, Musa M. Clinical pharmacokinetics of benzodiazepines. *J Clin Pharmacol* 1994; 34:804-11.
2. National Prescribing Centre. Prescribing for the older person. *MeReC Bulletin* 2000; 10:37-40. Available from: <http://www.npc.co.uk>
3. Gray S, Lai K, Larson E. Drug-induced cognition disorders in the elderly. *Drug Safety* 1999; 21:101-22.
4. Wang PS, Bohn RL, Glynn RJ et al. Hazardous benzodiazepine regimens in the elderly: effects of half-life, dosage, and duration on risk of hip fracture. *Am J Psychiatry* 2001; 158:892-8.
5. National Prescribing Centre. Benzodiazepine and newer hypnotics. *MeReC Bulletin* 2005; 5:17-20. Available from: <http://www.npc.co.uk>
6. National Institute for Clinical Excellence. Guidance on the use of zaleplon, zolpidem and zopiclone for the short term management of insomnia. *Technology Appraisal* 2004; 77. Available from: <http://www.nice.org.uk>
7. BMJ Publishing Group Ltd and Royal Pharmaceutical Society of Great Britain. British National Formulary. Edition 53 UK: Pharmaceutical Press; 2007.
8. Anxiety Disorders. In: Beers MH, ed. The Merck Manual of Geriatrics. 3<sup>rd</sup> ed. [Online]. 2000. Available from: <http://www.merck.com/mrkshared/mmg/home.jsp>
9. Rickels K, DeMartinis N, Rynn M, Mandos L. Pharmacologic strategies for discontinuing benzodiazepine treatment. *J Clin Pharmacol* 1999; 19(Suppl):12S-16S.
10. Schweizer E, Case WG, Rickels K. Benzodiazepine dependence and withdrawal in elderly patients. *Am J Psychiatry* 1989; 146:1242-3.

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