



Developing an Algorithm for Tapering Benzodiazepines in Patients Using Pain Management Therapy

Annesha Lovett, PharmD, MS, PhD¹, Kimberly Vernachio, PharmD, RPh², John Suttner, PharmD Candidate¹
¹College of Pharmacy, Mercer University, Atlanta, GA, ²Vernachio Managed Care Consulting, LLC, Canton, GA



BACKGROUND

- Tapering of benzodiazepines has been a widely studied topic.
- The main issue of ambiguity is the rate at which patients should be tapered.
- Philosophies of pain management have evolved in the past 20 years, yet there is little if any new research on shifting patterns of use, utility, outcomes beyond the 1990s.

OBJECTIVES

- (1) Develop an algorithm for tapering benzodiazepines used in conjunction with pain management therapy
- (2) Provide a comprehensive overview of the published peer-reviewed literature related to tapering strategies for benzodiazepines used in conjunction with pain management

METHODS

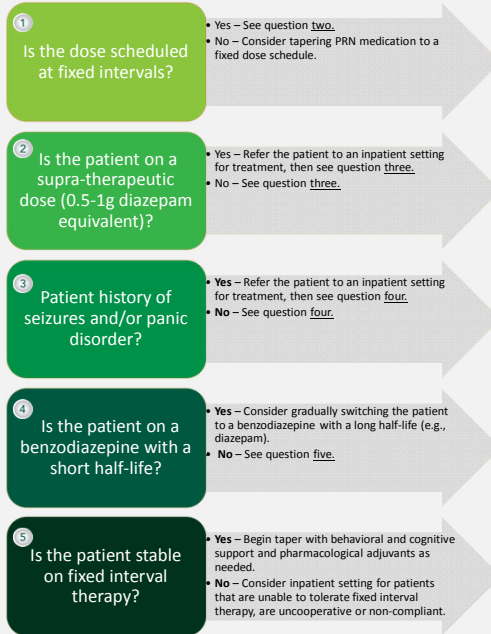
- PubMed, Ovid, Google Scholar and Cochrane Library were searched for articles from January 2000 to January 2013.
- Key words used were benzodiazepines, pain management, taper, tapering, detoxification, detox, dependence, withdrawal and weaning.
- Articles were summarized in a table based upon year of publication, author, title, study design, methods, findings and source.

RESULTS



1. There were 21 articles included in this review.
2. The proposed schedule for the taper is over a period of weeks to months (ranging from four weeks to four months), with the option of extending the taper if the patient experiences significant withdrawal effects.
3. Replacing the benzodiazepine with diazepam was favored, due to its long half-life and availability as a liquid preparation.
4. The long half-life is beneficial in stabilizing the patient due to the minimization potential euphoria from the medication. The liquid preparation also helps with the smaller dose administration.
5. For the majority of studies reviewed, the end goal was to have the patient stop taking a benzodiazepine altogether.
6. This endpoint may not be feasible in patients on particularly high doses, in which case, maintenance on a low dose was considered optimal. Medications deemed to be most beneficial in managing benzodiazepine withdrawal were antidepressants and mood stabilizers.
7. The equivalencies of the medications were also disputed among clinicians, with some leaning more toward clinical evidence and others more toward pharmacology.

DECISION FRAMEWORK



EXAMPLE TAPER TABLE

Diazepam 5 mg q.12h. 2mg tabs, 5mg tabs, 10mg tabs, 1mg/ml oral solution

Formulation	AM	PM	Daily dose
-------------	----	----	------------

ACKNOWLEDGEMENTS

The authors would like to acknowledge the organization PRIUM and its Senior Vice President, Mark Pew, for their support in the development and completion of this project.

CONCLUSIONS

- Although there is little consensus on the taper rate for benzodiazepines, there is an emphasis on making the taper individualized to the patient based on several factors to include psychosocial interventions.
- Patients undergoing pain therapy are often highly monitored due to their concomitant use of opioids and other pain management medications.
- Multiple tables are available suggesting approximate equianalgesic doses. The expanded ranges presented are noted in part where different disease pathology is addressed with the same drug (i.e., addressing anxiety vs. sedation).

Equivalent Dosing Table

Drug	Time to peak onset (hrs)	Half-life (hrs)	Approximate Equivalent Oral Dose (in mgs)
Alprazolam	1-2	6-12	0.5
Chlordiazepoxide	1.5-4	5-30	25
Clonazepam	1-4	18-50	0.25-0.5
Diazepam	1-1.5	20-100	5-10
Flurazepam	1-1.5	40-250	15-30
Lorazepam	2-4	10-20	1
Oxazepam	3-4	4-15	15-20
Temazepam	0.5-3	8-22	10-20
Triazolam	0.5-2	2	0.25

REFERENCES

1. Ashton CH. Review: brief interventions, gradual dose reduction and psychological interventions increase benzodiazepine cessation compared with routine care. *Evid Based Ment Health*. 2009;12:91. doi: 10.1136/ebmh.12.3.91.
2. Liebrez M, Boesch L, Stohler R, Calisch C. Agonist substitution—a treatment alternative for high-dose benzodiazepine-dependent patients? *Addiction*. 2010;105:1870-4.
3. Lingford-Hughes AR, Welch S, Nutt DJ. British Association for Psychopharmacology Evidence-based guidelines for the pharmacological management of substance misuse, addiction and comorbidity: recommendations from the British Association for Psychopharmacology. *J Psychopharmacol*. 2004 Sep;18:293-335.
4. Maremmani AG, Rovai L, Rugani F, Bacciardi S, Pacini M, Dell'osso L, Maremmani I. Clonazepam as agonist substitution treatment for benzodiazepine dependence: a case report. *Case Rep Psychiatry*. 2013;2013:367594. Epub 2013 Jan 30.
5. Parr JM, Kavanagh DJ, Cahill L, Mitchell G, McD Young R. Effectiveness of current treatment approaches for benzodiazepine discontinuation: a meta-analysis. *Addiction*. 2009;104:13-24.
6. Rickels K, DeMartini N, Rynn M, Mandos L. Pharmacologic strategies for discontinuing benzodiazepine treatment. *J Clin Psychopharmacol*. 1999;19:125-165.
7. Voshaar RC, Couvée JE, van Balkom AJ, Mulder PG, Zitman FG. Strategies for discontinuing long-term benzodiazepine use: meta-analysis. *Br J Psychiatry*. 2006 ;189:213-20.