

Tablet Splitting of Psychotropic Drugs for Patients With Dementia: A Pharmacoepidemiologic Study in a Brazilian Sample

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ABSTRACT

Purpose: The objective of this study was to assess the frequency of tablet splitting of psychotropic drugs in a population of older adults with a diagnosis of dementia.

Methods: This retrospective, cross-sectional study examined a sample of geriatric outpatients seen at a public center specializing in the care of elderly patients, a referral center for management of dementias in general, especially Alzheimer dementia to identify the frequency of tablet splitting of psychotropic drugs and the factors that may be involved in this practice. Comparison of the presence or absence of tablet splitting in relation to several parameters was assessed by means of *P* values; between-group differences with an $\alpha < 5\%$ ($P < 0.05$) were deemed significant.

Findings: The presence of dementia was significantly associated with prescriptions implying to split tablets, which was found in 88 patients with dementia (34.9%) versus 90 patients without dementia (23.7%) ($P = 0.002$). Among the 88 patients with dementia who split tablets, 64 (72.7%) split tablets of psychotropic drugs.

Implications: These results indicate the importance of identifying the practice of tablet splitting, particularly when it involves psychotropic drugs, because it entails several factors that can reduce the efficacy of the drug therapy. (*Clin Ther.* 2015;37:2332–2338) © 2015 Elsevier HS Journals, Inc. All rights reserved.

Key words: dementia, drug therapy, tablet, dementia, psychotropic drugs.

INTRODUCTION

As of 2010, the global prevalence of dementia was estimated at approximately 35.6 million people, which corresponds to 5% to 7% of the world population.¹ This figure is expected to double every 20 years, reaching 65.7 million in 2030 and 115.4 million by 2050.¹

The treatment of dementia requires a multidimensional approach, and the 4 pillars of care for this condition must be taken into account: managing the disease, managing symptoms, supporting the patient, and supporting the caregivers.² Pharmacologic and nonpharmacologic therapies are available to treat dementia, and the best strategy is to combine both.² Acetylcholinesterase inhibitors and *N*-methyl-D-aspartate antagonists are the mainstay of pharmacotherapy for the cognitive symptoms of dementia.² For its neuropsychiatric manifestations, both pharmacologic and nonpharmacologic approaches can be considered, and psychotropic drugs, such as antidepressants and antipsychotics, are often used.² However, these drugs are not always commercially available in the doses prescribed for treatment of neuropsychiatric symptoms. One option that can be used to achieve these target doses is tablet splitting.

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Tablet splitting, using hands or any device, is a common practice in some countries (Canada, United States, Germany), where it is even used in the health system, at pharmacies, or at other health care facilities, whether to achieve an intermediate dose among marketed strengths³; to provide appropriate fractional doses in a gradually increasing or decreasing dosage regimen (eg, in a weaning regimen)⁴; to begin therapy at the lowest possible dose, so as to decrease the incidence of adverse effects or to assess an individual patient's response to the drug⁴; or for economic reasons, to reduce the costs of pharmacotherapy.^{5,6} Tablet splitting could be a valid alternative for treatment of patients with dementia, who incur high costs due to use of multiple medications.⁷ Thus, the objective of the study was to assess the frequency of splitting of psychotropic drug tablets in a population of older adults diagnosed as having dementia.

METHODS

Study Design and Sample Selection

This retrospective, cross-sectional study was conducted on a convenience sample of geriatric outpatients treated at a public center, available for free for all citizens, specializing in the care of elderly patients, classified according to Brazilian law as individuals aged ≥ 60 years.⁸ The center provides referral for dementia in general, especially Alzheimer dementia. Dementia patients receive special attention from a multiprofessional team.

All outpatients seen at the study clinic from January 1, 2012, through December 31, 2012, with at least one recorded visit were enrolled. Patients with dementia were subdivided into those with Alzheimer and non-Alzheimer dementia⁹ and classified into the following age ranges according to their age at the time of the study visit: < 60 years old, 60 to 80 years old, and > 80 years. Patients' educational attainment was classified in years of formal schooling and categorized as follows: illiterate, up to 4 years, 4 to 8 years, and > 8 years.

All patients treated during the period of interest had their medical records reviewed and relevant data collected. All drugs being administered in fractional doses ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$) were recorded.

Identification of Prescribed Drugs and Tablet-Splitting Practices

The total number of patients who used psychotropic drugs was determined, with individuals

stratified by type of dementia syndrome, and these agents were organized into the following 6 classes: antidepressants, antipsychotics, antiepileptics, acetylcholinesterase inhibitors, *N*-methyl-D-aspartate antagonists, or other (an umbrella class for other psychotropic agents not classifiable elsewhere, such as benzodiazepines and imidazopyridines). We then quantified all psychotropic drugs used by the overall study population and by patients with a diagnosis of Alzheimer disease, taking all patient visits into account and disregarding prescriptions repeated on > 1 visit.

Analysis of tablet splitting by patients with dementia took into account the social, clinical, and demographic aspects associated with the practice of tablet splitting. We assessed potential associations between the number of patients who received a prescription implying that they had to take a subdivided tablets and the following characteristics of the study population: sex, age, educational attainment, and mean number of pathologic conditions (considering all comorbidities associated), visits, and current medications taken by the patients for any kind of pathological condition (as of the last visit). We then quantified all psychotropic agents used and split by patients, subdivided into the aforementioned categories, again taking all patient visits into account and disregarding prescriptions repeated on > 1 visit.

Potential drug-drug interactions that could change the effectiveness of the split psychotropic drugs were checked in the Lexi-Interact database.¹⁰ Those interactions that, like tablet splitting, could increase or decrease plasma concentrations or reduce the pharmacologic activity of the psychotropic drugs were taken into account.

Statistical Analysis

Comparison of tablet splitting in relation to several parameters was assessed by means of *P* values. Between-group differences with an $\alpha < 5\%$ ($P < 0.05$) were deemed significant. The statistical tests used to derive *P* values were the χ^2 test for categorical variables (sex, age, educational attainment, pathologic conditions, the use of split psychotropic drugs, current prescriptions) and the Mann-Whitney *U* test for mean number of pathologic conditions, visits, and mean number of current medications. All analyses were performed with SAS statistical software (Version 9.0) (SAS Institute, Cary, North Carolina).

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