

Adherence to Medication in Patients with Dementia: Problems and Solutions

Daniel J. Brauner, MD, Department of Medicine/Geriatrics, University of Chicago, Chicago, IL, USA.

Lack of adherence is a major reason for the failure of medical therapies and is an especially important and sometimes underappreciated issue for the growing number of people with dementia. The factors that tend to affect adherence in persons with dementia have begun to be appreciated and have implications for patients more generally.

Strategies for improving adherence in patients with dementia based on their cognitive problems are discussed. Increased awareness of adherence will encourage physicians to create more reasonable and simplified medical regimes and promote the use of aids for improving adherence, which can also be used with cognitively intact patients.

Key words: dementia, adherence, medication management capacity

Introduction

Although there is a general appreciation that the increasing prevalence of cognitive problems and dementia will have important repercussions for the care of older adults, there has been little attention paid to the care of nondementia illnesses among this group.¹ The term nondementia illnesses highlights how the presence of dementia affects many aspects of care of these conditions, leading to an alteration in the risk-burden/benefit ratio as compared with cognitively intact individuals. A lack of adherence represents an important contributor to this altered ratio as well as a major obstacle to effective treatment and one of the most significant reasons for failure of therapy. The consideration of adherence problems in patients with dementia is useful because it highlights a pervasive issue among all patients and can provide insight into how patient characteristics affected by dementia—such as memory, judgment, execu-

tive function, and linguistic ability—affect the provision of health care.

What Is Meant by Adherence and How Do We Measure It?

Adherence is the preferred word for describing the actions of patients who are following their medical regimen; it is a much broader and less value-laden term than *compliance*. For oral medication, adherence refers simply to a pill being swallowed in the recommended fashion. There are many possible reasons for nonadherence, one of which is noncompliance—the willful refusal to comply with the medical regimen. More often than not, noncompliance is not the reason for nonadherence, though many still use the terms interchangeably.

In a recent review of adherence, forgetfulness and cognitive impairment were listed as barriers to adherence but, dementia was not specifically mentioned.² This omission may represent a

lack of appreciation of the large number of comorbid conditions found in the increasing number of persons diagnosed with dementia,³ and the resulting large number of medications prescribed for this group. On the other hand, the omission could represent the common bias that individuals with dementia lack the agency by which to even be considered nonadherent. Nevertheless, the article is a useful general review of many important issues surrounding adherence.

Empirical evidence does exist to support the suspicion that adherence would be affected by dementia. The tracking of pharmacy claims data is one method used for assessing adherence, at least for getting the prescription filled; this is a necessary but obviously not sufficient activity. In a study of 59 individuals in a trial of donepezil for dementia, only 31 (52.5%) completed a 6-month trial without a large gap in treatment.⁴ However, using a similar method to track long-term persistence in the use of statins in a large cohort of older adults in which only 4.2% were described as having dementia, researchers found a comparable 6-month persistence of 56%.⁵

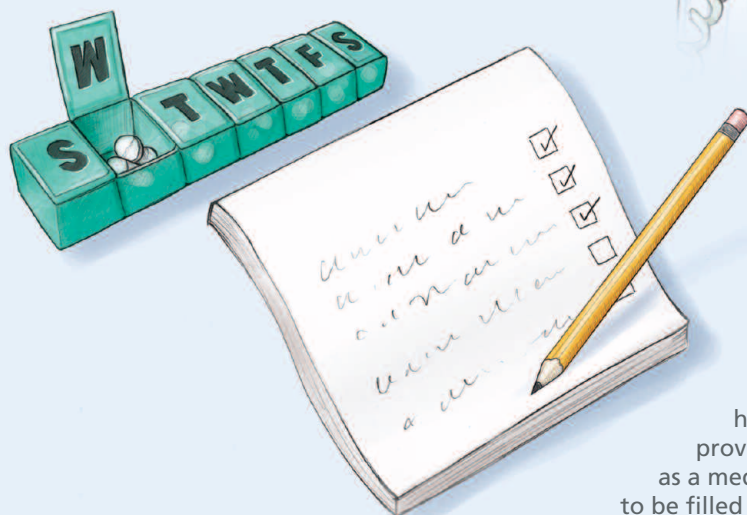
A better method to assess adherence is to perform the more labour-intensive activity of counting pills. Responding to the generally accepted notion that at least “some individuals with dementing illness, particularly individuals in the early stages of the disease, are trusted to manage their medications with little or no assistance,”⁶ Cotrell and colleagues measured adherence and the level of assistance they received in 27 persons with mild to moderate dementia of the Alzheimer’s type compared with 20 healthy controls. They found that adherence rates (measured by pill count) among respondents with Alzheimer’s disease (AD) and those who were nonimpaired were not statistically different, with a considerable range found in both groups. Individuals with AD were better able to predict their adherence, whereas those in the comparison group overpredicted their adherence.⁶ The control group did score better on the Drug Regimen Unassisted Grading Scale (DRUGS),

Figure 1:
Strategies for Improving Adherence



Provide cues to support remembering to take medicines, such as placing medicines in an area a person routinely visits in the morning, such as near the coffee pot for a coffee drinker.

If family members or others are available, they should be enlisted to the degree appropriate to help ensure adherence. This could range from a telephone call in the morning, to setting up medication organizers, to actually dispensing and supervising the taking of medicines.



Monitor whether the patient has taken the medicines by providing a "traceable context," such as a medication organizer and a checklist to be filled out after taking medications.

Figure 2: A Sample Medication Checklist for Improving Adherence**Weekly Medication Checklist**

1. Write the names of the medications you take on the dotted lines below. You can also write the shape and colour of the pill if it helps you to remember.

2. Check the box next to the medication when you take your dose for the day.

3. If you take two doses of the same medication every day, write the name on two lines, and make sure to check one box for each dose.

Name of Medication/Shape and colour of Pill	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1.....	☐	☐	☐	☐	☐	☐	☐
2.....	☐	☐	☐	☐	☐	☐	☐
3.....	☐	☐	☐	☐	☐	☐	☐
4.....	☐	☐	☐	☐	☐	☐	☐
5.....	☐	☐	☐	☐	☐	☐	☐
6.....	☐	☐	☐	☐	☐	☐	☐
7.....	☐	☐	☐	☐	☐	☐	☐
8.....	☐	☐	☐	☐	☐	☐	☐
9.....	☐	☐	☐	☐	☐	☐	☐
10.....	☐	☐	☐	☐	☐	☐	☐

which measures ability to identify medications correctly, specify correct dosage, and specify the correct timing of dosage.⁶ This scale also includes assessment of the ability to access the containers, which was not done in this study. Individuals with dementia tended to overpredict their abilities on this modified DRUGS measure. As predicted a large percentage (85%) of informants (mostly spouses) for the AD group reported providing assistance in managing their relatives' medications but they often underestimated the patients' difficulties with adherence as measured by DRUGS.

In a retrospective study of a self-medication program in a rehabilitation hospital, researchers identified variables that predicted medication management capacity.⁷ Medication management capacity was defined as "the cognitive and functional ability to self-administer a medication regimen as it has been prescribed."⁷ It assumes that the intention to follow a medical regime is present and

that it is the capacity of an individual that may limit accurate medical management. The investigators measured the medication complexity index (MCI), which "considers the number of tablets taken per dose, the number of daily doses of medication taken each day, and additional directions that must be followed," as well as a variety of patient characteristics to assess what predicts medicine management capacity. Although, participants with moderate to severe cognitive impairment had the highest probability of at least one error despite MCI, the investigators were able to show that the probability of at least one error increased in individuals with mild cognitive impairment when MCI scores exceeded a threshold value. The numbers of errors increased substantially for both those with mild and moderate cognitive impairment as the MCI increased.

Problems with executive function and working memory are well-described consequences of dementia that would be

expected to impact on medication adherence. As stated by Insel *et al.*, "Adherence to medicines requires the recruitment of executive function because taking medicines consistently involves developing and implementing a plan to adhere."⁸ The authors theorized that working memory is important to medication adherence because a person must "keep the intention to take medicines active in working memory often while doing other things like checking the time, pouring a glass of water and getting the medicines."⁸ In a study of adherence to one medication among 95 community-dwelling participants (mean age 78 years), Insel *et al.* administered a battery of cognitive tests that included measures of executive function, working memory, cued recall, and recognition memory. They found a composite of executive memory and working memory to be the only significant predictor of medication adherence, suggesting that these cognitive domains should be emphasized and

Key Points

Considering adherence problems in patients with dementia highlights a pervasive issue among all patients and can provide insight into how memory, judgment, executive function, and linguistic ability affect the provision of health care.

The tracking of pharmacy claims data is one method for assessing adherence, at least for getting the prescription filled; a better, more labour-intensive, method is counting pills.

Understanding and belief about the efficacy and side effects of medication have been shown to affect adherence in cognitively intact individuals and may also exert an influence on patients with dementia.

Removing medicines is probably the most efficient method for simplifying regimes and improving adherence.

Consider medicine management capacity and its dependence on cognitive ability and medication complexity in your patients with dementia.

assessed when there is concern with adherence.

There are other consequences of dementia that maybe more difficult to assess but that no doubt also influence adherence. Understanding and belief about the efficacy and side effects of medication have been shown to affect adherence in cognitively intact individuals and may also exert an influence on patients with dementia.⁹ These aspects may also affect the willingness of persons with dementia to take medication given to them by a caregiver. Patients' understanding and appreciation of their illness should also play a role in their adherence to treatments for that illness and could obviously be affected by the presence of dementia.

Strategies for Improving Adherence

Few good studies exist that deal specifically with strategies for improving adherence to medication in people with dementia.⁹ However, many of the approaches to improving adherence in cognitively intact individuals can be applied and customized for use in persons with cognitive impairment and dementia (Figure 1).

The first question to be asked is whether the patient is on the simplest drug regimen possible. Removing medicines is probably the most efficient

method for simplifying regimes and improving adherence. Given the negative effect of complex medical regimes on adherence, especially in patients with dementia, the argument could be made for taking these patients off medicines that may present greater risks and burdens and be less beneficial. Guidelines have been developed for discontinuing medications based on the altered risk-burden to benefit ratios of many therapies in patients with advanced dementia.¹⁰ Although such a strategy makes clinical sense, evidence suggests that stopping medications even when the benefits are negligible is not part of regular medical care.¹¹ In addition, an important strategy for simplifying medical regimes is to prescribe single daily-dose drugs whenever possible.

A key to any intervention is to first identify nonadherence and develop strategies based on individual characteristics. After simplifying the drug regimen,

the next important step is to assess whether the patient possesses medication management capacity. This is dependent on the medication complexity and the degree of cognitive impairment; however, clinicians must also bear in mind that patients' appreciation of their memory problem as well as their motivation to take medicines correctly are also important characteristics related to adherence.⁶ The most feasible method for assessing adherence in the clinical setting is to have patients bring their medications and count the pills.

Individualizing memory strategies to improve adherence has been shown to be effective in a population of older adults that included some with dementia.¹² In this study by Insel and Cole, these strategies involved providing cues to support remembering to take medicines, such as placing medicines in an area a person routinely visits in the morning, such as the coffee pot for a coffee drinker. This intervention also involved helping participants monitor whether they have taken the medicines by providing a "traceable context," such as a medication organizer and a checklist (see Figure 2) to be filled out after taking medications.¹²

If family members or others are available, they should be enlisted to the degree appropriate to help ensure adherence. This could range from a telephone call in the morning, to setting up medication organizers, to actually dispensing and supervising the taking of medicines. Educating family members as to the reason for the medications as well as potential side effects helps them to be more effective caregivers.

If a person with dementia is living

Clinical Pearls

Improve adherence in individuals with dementia by stopping medicines whose burden-risk have outpaced their benefit.

Enlist caregivers' and relatives' aid in devising strategies for improving adherence in patients with dementia who lack sufficient medicine management capacity.

independently successfully except for problems with medication adherence and help either from family or others is not available, the decision needs to be made as to whether a more supervised setting is necessary. Before this recommendation is made, the benefits of these drugs must again be thoroughly reviewed given the increased burden engendered by such a major lifestyle adjustment.

Conclusion

Adherence is a continuum, with very few individuals being absolutely adherent or nonadherent. With polypharmacy being so prevalent among older adults in general, the addition of several new medicines to treat patients diagnosed with dementia often results in these patients being on the most complex medical regimens.⁹ Patients' medication regimens should be simplified as much as possible, especially in those with dementia, and the risk-burden/benefit ratio considered so that medicines no longer providing enough benefit can be discontinued. Finally, as physicians are not very adept at detecting adherence, we need to make this a greater part of our routine practice, especially for patients with cognitive problems and dementia.



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