Use of Psychotropics in Long-term Care Facilities for the Elderly

Psychotropic medications are frequently prescribed in long-term care facilities for the elderly, despite the fact that a number of factors make it difficult to do so. This article reviews mental health issues in nursing homes, prescribing in long-term care facilities, medication utilization patterns, the management of challenging behaviors, adverse effects of psychotropic medications, legislation and education, and optimal prescribing.

By David K. Conn, MB BCh, BAO, FRCPC

The number of seniors receiving care in nursing homes has risen dramatically in recent decades. There were 240,000 individuals living in Canadian nursing homes in 1996 and this number is expected to steadily increase. By 2021, seniors (those aged 65 years and over) are expected to account for 18% of the Canadian population, making up a total of 6.7 million people. The population aged 85 years and over is growing at the fastest rate and it is this group that is most likely to require long-term care. According to Statistics Canada, 38% of all women aged 85 years and over and 24% of similarly aged men lived in an institution in 1996.

Mental Health Issues in the Nursing Home

Numerous studies indicate that 80% to 90% of nursing home residents suffer from a mental disorder. Rovner et al carried out a rigorous study of 454 consecutive nursing home admissions. More than two-thirds of residents suffered from some form of dementia, while 10% suffered from affective disorders and 2.4% were diagnosed as having schizophrenia or another psychotic illness. Approximately 40% of the residents suffering from dementia had psychiatric complications. Depression is also extremely common in the institutionalized elderly. Studies suggest that between 15% and 25% of nursing home residents have symptoms of major depression, and as many as another 25% have minor depression. A recent study of nursing home residents in Australia found that 77% demonstrated some degree of aggression or agitation. Delusions were present in 56% and hallucinations were present in 33% of the residents.

Given the high prevalence of mental disorders in long-term care facilities for the elderly, psychotropic medications are frequently prescribed. However, numerous studies over the last 20 years have raised concerns over the quality of prescribing to nursing home residents. A number of factors make the nursing home a unique setting for drug prescription. These include limited physician input, non-physicians’ contribution to treatment decisions, the extreme frailty of the residents, the complexity of the social institution, and limited staffing levels and staff education. Medication-related problems include improper drug selection, sub-therapeutic dosage, excessive dosage, adverse drug reactions, drug interactions and drug use without valid indications.
Prescribing in Long-term Care Facilities

Avorn and Gurwitz have outlined some basic questions that should be asked prior to the prescription of any drug in the nursing home setting. These questions are listed in Table 1. A number of studies have shown that there is often a failure to document the reason for prescribing medications in long-term care settings. It is particularly important to describe and document the target problem being treated, to consider alternatives to medications and to review potential adverse effects. It is also extremely important to determine by what criteria, and when, the effects of therapy will be reassessed.

A panel of national experts in the U.S. attempted to reach a consensus on defining inappropriate medication use in the nursing home. Although there was agreement on most questions, the panel failed to agree on several issues, including the use of antipsychotic medications for non-psychotic disorders. Using the agreed-upon criteria, they reported that more than 40% of residents in California nursing homes had at least one inappropriate prescription. A study of long-term care institutions in Ontario, Conn et al reported that the rate of use of antipsychotic medication ranged from 20% to 40% and antidepressant use varied from 4% to 39%. Snowdon hypothesized that factors that might explain these variations include differences in prevalence and severity of disorders, levels of physical disability, prescribing habits of physicians, involvement by pharmacists, number of untrained staff, size and design of institutions, funding and type of institutions, socioeconomic background of the residents and policies regarding admissions. Comparative rates of psychotropic medication utilization in various countries are summarized in Table 2. The two studies carried out in 1997 and 1998 using similar methodology in the U.S. and Canada, respectively, are most interesting and suggest that antipsychotic medications, anxiolytics and hypnotics were more frequently prescribed in Canadian nursing homes, with antidepressants being used somewhat more often in the U.S. Critics of the use of psychotropic medications in nursing homes have particularly focused on the use of antipsychotic drugs and benzodiazepines. General concerns about the use of psychotropic medications have included the frequent lack of a documented diagnosis, a finding that physician characteristics predict drug dosage, the high risk of complications (including falls, fractures and movement disorders) and, finally, the lack of availability of mental health consultations for nursing-home residents.

Table 1
Questions to be Asked in Evaluating Drug Use in a Nursing Home

- What is the target problem being treated?
- Is the drug necessary?
- Are nonpharmacologic therapies available?
- Is this the lowest practical dose?
- Could discontinuing therapy with a previously prescribed medication help to reduce symptoms?
- Does this drug have adverse effects that are more likely to occur in an older patient?
- Is this the most cost-effective choice?
- By what criteria, and at what time, will the effects of therapy be assessed?

Utilization Patterns

Numerous studies suggest that between 50% and 75% of nursing home residents have at least one prescription for psychotropic medication. The utilization rates of these medications vary widely from country to country and from institution to institution. In a study of long-term care institutions in Ontario, Conn et al reported that the rate of use of antipsychotic medication ranged from 20% to 40% and antidepressant use varied from 4% to 39%. Snowdon hypothesized that factors that might explain these variations include differences in prevalence and severity of disorders, levels of physical disability, prescribing habits of physicians, involvement by pharmacists, number of untrained staff, size and design of institutions, funding and type of institutions, socioeconomic background of the residents and policies regarding admissions. Comparative rates of psychotropic medication utilization in various countries are summarized in Table 2. The two studies carried out in 1997 and 1998 using similar methodology in the U.S. and Canada, respectively, are most interesting and suggest that antipsychotic medications, anxiolytics and hypnotics were more frequently prescribed in Canadian nursing homes, with antidepressants being used somewhat more often in the U.S. Critics of the use of psychotropic medications in nursing homes have particularly focused on the use of antipsychotic drugs and benzodiazepines. General concerns about the use of psychotropic medications have included the frequent lack of a documented diagnosis, a finding that physician characteristics predict drug dosage, the high risk of complications (including falls, fractures and movement disorders) and, finally, the lack of availability of mental health consultations for nursing-home residents.
Managing Challenging Behaviors

As noted above, the behavioral problems associated with dementia are highly prevalent and cause a great deal of concern for nursing home staff. Physical aggression causes particular concern, especially the danger of injury to other residents, or staff themselves. Staff should always consider nonpharmacologic interventions (e.g., behaviour management) as a first step. In the past, the most commonly prescribed medications for behaviour problems in nursing homes have been neuroleptic (antipsychotic) drugs. Two meta-analyses of placebo-controlled trials of typical antipsychotics revealed only modest benefits.\textsuperscript{22,23} For example, Schneider et al\textsuperscript{22} calculated that 58% of residents receiving antipsychotics showed some improvement, compared to 40% of those receiving placebo. Fortunately, in recent years, large-scale randomized placebo-controlled trials of atypical antipsychotics have been carried out in nursing-home settings. These include three studies of risperidone,\textsuperscript{24,25,26} three of olanzapine\textsuperscript{27,28,29} and one of quetiapine.\textsuperscript{30} The studies of risperidone and olanzapine demonstrated that these medications were effective in reducing psychotic symptoms and/or agitation. The quetiapine study suggested that it was superior to placebo in reducing agitation but not psychosis. Studies of other types of psychotropic medications have

<table>
<thead>
<tr>
<th>Authors</th>
<th>Type, Number and Location of Institutions</th>
<th>Any Psychotropics</th>
<th>Neuroleptics</th>
<th>Antidepressants</th>
<th>Benzodiazepines</th>
<th>Anxiolytics</th>
<th>Sedatives/Hypnotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nolan &amp; O’Malley\textsuperscript{14}</td>
<td>11 private nursing homes, Dublin, Ireland</td>
<td>65%</td>
<td>27%</td>
<td>13%</td>
<td>42%</td>
<td>—</td>
<td>—</td>
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<td>Tyberg &amp; Gulman\textsuperscript{15}</td>
<td>32 nursing homes in Denmark</td>
<td>56%</td>
<td>20%</td>
<td>11%</td>
<td>—</td>
<td>13%</td>
<td>33%</td>
</tr>
<tr>
<td>Snowdon et al\textsuperscript{16}</td>
<td>46 nursing homes in Sydney, Australia</td>
<td>65.9%</td>
<td>36.6%</td>
<td>15.6%</td>
<td>—</td>
<td>14.3%</td>
<td>39.2%</td>
</tr>
<tr>
<td>Wancata et al\textsuperscript{17}</td>
<td>10 nursing homes in Vienna &amp; Tyrol, Austria</td>
<td>72.1%</td>
<td>32.1%</td>
<td>21%</td>
<td>—</td>
<td>26.3%</td>
<td>22.1%</td>
</tr>
<tr>
<td>Borson &amp; Doane\textsuperscript{18a}</td>
<td>39 skilled geriatric-care facilities, Wash. state</td>
<td>50%</td>
<td>13.3%</td>
<td>20.1%</td>
<td>—</td>
<td>18.4%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Tobias &amp; Pulliam\textsuperscript{19b}</td>
<td>878 nursing homes in 40 U.S. states (Specialized units excluded)</td>
<td>—</td>
<td>14.2%</td>
<td>26.3%</td>
<td>—</td>
<td>10.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Yee &amp; Tobias\textsuperscript{20b}</td>
<td>124 long-term care facilities in Canada</td>
<td>—</td>
<td>21.8%</td>
<td>21.8%</td>
<td>—</td>
<td>13.6%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Schmidt et al\textsuperscript{21}</td>
<td>15 nursing homes in Sweden after an educational intervention</td>
<td>77.1%</td>
<td>32.6%</td>
<td>25%</td>
<td>—</td>
<td>43.8%</td>
<td>32.2%</td>
</tr>
<tr>
<td>Conn et al\textsuperscript{12}</td>
<td>10 homes for the aged and nursing homes in Ontario, Canada</td>
<td>53.3%</td>
<td>18.4%</td>
<td>21.7%</td>
<td>31.0%</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

\textsuperscript{a} Based on adding scheduled and PRN data together.
\textsuperscript{b} These studies reported percentage of residents with routine medication orders (shown here). Average PRN orders per resident were also provided.
also demonstrated efficacy. A study of citalopram\textsuperscript{31} showed a significant decrease in irritability and depressed mood, and studies of carbamazepine\textsuperscript{32,33} revealed significant improvements in agitation. Although frequently prescribed, benzodiazepines have not been well studied in the nursing-home setting. There is growing interest with regard to the possibility that cholinesterase inhibitors may have behavioral benefits. Studies do suggest that these medications may delay the emergence of behavioral symptoms,\textsuperscript{34} although a randomized controlled trial in a nursing-home setting found no significant difference in behavioral symptoms between groups.\textsuperscript{35} There is some evidence of particular benefit in the behavioral and psychotic symptoms associated with dementia with Lewy bodies.\textsuperscript{36}

**Adverse Effects**

A number of nursing-home studies have focused on the adverse effects of psychotropic medications. Ray et al reported a higher rate of falls with benzodiazepines and noted that the risk increases with dosage.\textsuperscript{37} Sgadari et al found an increased risk of fractures, particularly among those over the age of 85 years receiving high doses of benzodiazepines with a long half-life.\textsuperscript{38} Salzman et al reported an improvement in short-term memory following discontinuation of anxiolytic or hypnotic benzodiazepines.\textsuperscript{39} Thapa et al found an increased risk of falls for residents using tricyclic antidepressants and selective serotonin reuptake inhibitors.\textsuperscript{40} Recent reports have suggested that individuals in nursing homes who receive an antipsychotic may have an increased mortality rate and a greater risk of having a cerebrovascular event, compared to those receiving a placebo. However recent Canadian Guidelines still recommend an atypical antipsychotic for individuals with severe behavioral symptoms, especially if there are associated psychotic symptoms.\textsuperscript{41}

In response to concerns about the use of psychotropic medications in older adults, the American Society of Consultant Pharmacists (ASCP) have developed guidelines\textsuperscript{42} as follows:

1) Older adults should be screened for presence of affective, cognitive and other psychiatric disorders.

2) Older adults who exhibit symptoms of psychiatric disorders should be thoroughly assessed by a qualified healthcare professional.

3) Behavioral symptoms in older adults should be objectively and quantitatively monitored by caregivers or facility staff and documented on an ongoing basis. When possible, psychiatric symptoms should also be monitored in this fashion.

4) If the behaviors do not present an immediate serious threat to the patient or others, the initial approach to management of behavioral symptoms in older adults should focus on environmental modifications, behavioral interventions, psychotherapy or other nonpharmacologic interventions.

5) When medications are indicated, select an appropriate psychotherapeutic agent, considering effectiveness of the medication and risk of side effects.

6) Begin medication at the lowest appropriate dose and increase the dose gradually.

7) Monitor the patient for therapeutic response from the medication and for adverse drug reactions.

8) The psychotherapeutic medication regimen should be routinely re-evaluated for the need for continued use of medication, dosage adjustments or a change in medication.

**Legislation and Education**

Prompted by concerns about inappropriate and unnecessary prescribing of psychotropic medications, as well as other concerns about psychiatric care in nursing homes, federal legislation in the U.S. was enacted entitled “the Omnibus Budget Reconciliation Act of 1987”

Numerous studies suggest that between 50% and 75% of nursing-home residents have at least one prescription for psychotropic medication.
The legislation included strict guidelines for physicians with regard to prescribing psychotropic medications in nursing homes. Residents must not receive an “unnecessary drug,” which is defined as any drug used:
1) in excessive dosage;
2) for excessive duration;
3) without adequate monitoring;
4) without adequate indication for its use;
5) in the presence of adverse consequences, which indicate that it should be reduced or discontinued;
6) any combination of the above reasons.

The guidelines state explicitly that antipsychotic medications can only be prescribed for certain indications. It is not permitted to use antipsychotics for uncomplicated anxiety, insomnia, wandering or agitation. The provisions of the OBRA legislation also include screening of residents prior to entry into nursing homes and regular reviews by consulting pharmacists. Nonpharmacologic strategies for managing behavioral symptoms were mandated. Residents must be comprehensively assessed using a Resident Assessment Instrument (RAI), which includes the Minimum Data Set (MDS), triggers and Resident Assessment Protocols (RAPs). Since 1999, quality indicators based on the MDS have been incorporated into survey procedures and interpretive guidelines. Several studies have reported the impact of OBRA on prescribing rates and demonstrate a decrease of between 27% and 36% in the use of antipsychotic medications.43,44

There is also evidence that educational programs can help to reduce inappropriate prescribing. It is most important to recognize that all members of the team play a role in decisions regarding the use of psychotropic medications. The opinions of family members are also most important. Avorn et al carried out a randomized controlled trial of an education program for physicians and nurses in 12 nursing homes.45 The educational program was successful in reducing rates of “inappropriate” medication use as defined for the study. A Swedish study also reported a successful reduction in rates of inappropriate prescribing.46 Avorn et al have described an educational approach called “academic detailing,” which incorporates the marketing techniques used by pharmaceutical company representatives in the teaching of nursing home staff. This approach appears to be successful because it takes into account the limited amount of time available for nursing home staff to attend educational activities. Unfortunately, the amount of education available in most Canadian nursing homes is woefully inadequate for a number of reasons, including lack of funding.

Optimal Prescribing
Suggestions with regard to how to optimize prescribing of psychotropic medication include:
• ask the basic questions listed in Table 1 whenever starting a patient on a new medication;
• assist staff to develop skills in the use of nonpharmacologic interventions;
• document the progress of the resident using a standardized rating scale;
• use clinical guidelines, which incorporate an evidence-based approach;
• obtain psychiatric consultation for complex cases if available;
• develop educational programs, which should target all disciplines as well as families, and
• drug audits, which provide feedback to individual physicians and offer comparisons of prescribing rates between physicians, institutions or regions.

In addition, chart reviews can be used to evaluate documentation regarding diagnosis, reason for use of medication, target symptoms, frequency of follow up and drug complications.

In conclusion, the utilization of psychotropic medications in nursing homes remains a concern. Fortunately in recent years, more randomized controlled trials of psychotropic medications have been carried out in the nursing home setting. Although legislation in the U.S. appears to have had an impact on the prevalence of use of certain medications, educational programs can also help to optimize the use of psychotropic medications.
References:


