Both delirium and behavioural and psychologic symptoms of dementia (BPSD) are common causes of agitation in the elderly. An accurate diagnosis is essential in order to manage the agitated patient.

**Delirium**

Delirium is present in up to 56% of older hospitalized patients and should be considered when presented with an agitated older adult.\(^1\) It is an acute confusional state, characterized by an onset of hours to days, often caused by an underlying medical condition, and associated with a fluctuating level of consciousness. Patients are usually disoriented to time and place. Attention, which is severely impaired, can be assessed using simple bedside tests (Table 1).

**Diagnosis of delirium**

Essentially, any change in medical status or location can cause delirium in susceptible older or cognitively-impaired patients.

Investigations are aimed at identifying underlying causes. Because frail, older patients frequently have multiple medical problems, more than one disease process may be contributing to the delirium. Common investigations are listed in Table 2.

**Treatment of delirium**

The definitive treatment of the agitated, delirious patient is to treat underlying causes.

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**Murray’s Agitation**

Murray, 86, was admitted to hospital with pneumonia. After 48 hours, he became increasingly “agitated” (i.e., calling out, removing his intravenous line, and becoming disoriented to place and time).

Murray was distractable and appeared to have visual hallucinations. His vital signs were stable. Delirium was diagnosed.

**What would you do for Murray?**

For more on Murray, go to page 74.

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**Table 1**

**Bedside tests of attention**

- Days of the week backwards
- Months of the year backwards
- Counting backwards from 20
- Random digit span
- Spelling “world” backwards
- Recited list of random digits (i.e., “Can you please raise your hand every time I say the number ‘3’?”)

In the interim, both non-pharmacologic and pharmacologic symptomatic strategies can be helpful.
The goals of non-pharmacologic strategies include:

- reorienting the patient,
- providing appropriate stimulation,
- encouraging sleep, and
- ensuring safety.

Common strategies are listed in Table 3.

*Other investigations will be guided by the clinical presentation.*

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Pharmacologic management is not necessary for all delirious patients. Medications may be considered if a patient is placing themselves or others at risk, or if the patient is experiencing disturbing symptoms, such as hallucinations. Any prescribed agents should be used for a short term at the lowest effective dose, and be re-evaluated daily.

If medications are required, antipsychotic agents are recommended (Table 4). Small doses of haloperidol (oral, subcutaneous, intramuscular, or intravenous) are suggested. Higher doses are occasionally needed for more severe agitation.

Although there is limited evidence to support their use, atypical antipsychotic agents (i.e., risperidone, olanzepine, and quetiapine) are frequently used at low doses. These agents carry a decreased risk of extra-pyramidal side-effects, to which older patients are particularly susceptible.

While benzodiazepines are sometimes used to manage agitation in delirium, older patients are at risk for excessive sedation, falls, and behavioural disinhibition. Monotherapy with benzodiazepines is not recommended unless alcohol or benzodiazepine withdrawal is the underlying cause of the delirium.

Sadly, many patients do not fully recover from their delirium. Prevention is critical, and Inouye et al. have been innovators in this area.2

### Table 3

**Non-pharmacologic strategies for delirium**

- Provide a clock and calendar
- Ask family members or volunteers to help reorient the patient by cueing them
- Ask family members to bring familiar belongings to help the patient to adjust to a new environment
- Avoid overstimulation or understimulation
- Promote sleep with a quiet environment, soothing music, and appropriate lighting
- Optimize the patient’s senses—use their eyeglasses and hearing aids

**Pharmacologic treatment**

Delirium is present in up to 56% of older, hospitalized patients. 1. How is delirium differentiated from dementia?

Delirium is a more likely diagnosis if there is an acute cognitive decline, decreased attention, and fluctuating level of consciousness on serial observations.

2. What is the relationship between delirium and dementia?

Patients with dementia are at a significantly increased risk of delirium. Many delirious patients do not fully recover their cognitive abilities and may go on to meet criteria for dementia.

3. Is there a role for physical restraints in managing agitated older patient?

The use of physical restraints is a risk factor for delirium. Their use should be minimized as they have not been shown to reduce injuries.

Agitated BPSD

Behavioural and psychologic symptoms of dementia (BPSD) must be considered in patients with dementia. Up to 90% of patients with dementia will experience BPSD; agitation is the most common symptom.

Diagnosis and management of BPSD

As with delirium, there may be several contributing factors to BPSD. A systematic approach is helpful to elucidate and address all causes. Treatment is directed at underlying causes.

The cognitive deficits associated with dementia (i.e., memory impairment,agnosia, apraxia, aphasia, and deficits in executive function) can predispose a patient to agitation. For example, if a patient does not recognize they are unable to perform certain tasks, they might become agitated when their activities are restricted.

Treatment of the underlying dementia with a cholinesterase inhibitor (donepezil, rivastigmine, or galantamine) might reduce BPSD. Otherwise, non-pharmacologic strategies, which take into consideration the patient’s cognitive strengths and deficits, will often be helpful.

In a cognitively-impaired patient, agitation may be an atypical presentation of a disease process; pain or dyspnea can manifest as agitation. Psychiatric symptoms, such as depression or elation, and psychotic symptoms, such as delusions or hallucina-

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**Table 4**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Class</th>
<th>Suggested starting dose range</th>
<th>Possible indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>Typical antipsychotic</td>
<td>• 0.5 mg to 1 mg, every 30 to 60 minutes, as needed, po/iv/sc/im, in severe agitation</td>
<td>Delirium with agitation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 0.5 mg to 1 mg every 4 hours, as needed, po/iv/sc/im, for less severe symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• If regular dosing needed, 0.5 mg to 1 mg po, bid</td>
<td></td>
</tr>
<tr>
<td>Risperidone</td>
<td>Atypical antipsychotic</td>
<td>• 0.25 mg to 0.5 mg, po, daily to start</td>
<td>Delirium with agitation; certain BPSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 2 mg maximum daily dose</td>
<td></td>
</tr>
<tr>
<td>Olanzepine</td>
<td>Atypical antipsychotic</td>
<td>• 2.5 mg to 5 mg, po, daily to start</td>
<td>Delirium with agitation; certain BPSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 15 mg maximum daily dose</td>
<td></td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Atypical antipsychotic</td>
<td>• 12.5 mg to 25 mg, po, bid to start</td>
<td>Delirium with agitation; certain BPSD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 200 mg maximum daily dose</td>
<td></td>
</tr>
</tbody>
</table>

bid: Twice a day  
iv: Intravenous  
po: Orally  
s: Subcutaneous  
im: Intramuscular  
BPSD: Behavioural and psychologic symptoms of dementia
Followup on Murray

Pending investigations, nursing staff instituted non-pharmacologic strategies. Murray's eyeglasses and hearing aids were applied, volunteers helped to reorient him, and family members brought in familiar objects.

A palpable bladder prompted catheterization for 400 cc of urine (with normal urinalysis). A review of his chart revealed no bowel movements since admission; bowel care was administered. Lorazepam, 0.5 mg, every night as needed for sleep was discontinued.

Serum blood urea nitrogen and creatinine were consistent with mild dehydration; family and nursing staff encouraged oral fluids.

Other investigations including a complete blood count, electrolytes, glucose, calcium, and cardiac enzymes were within normal limits. Chest radiography and electrocardiogram were unchanged.

Murray's agitation resolved within 24 hours. He was discharged three days later.

References

Take-home message

- Successful management of the agitated older adult requires:
  - appropriate diagnosis of delirium, BPSD, or other significant conditions;
  - diligent assessment for multiple underlying causes;
  - non-pharmacological and sometimes pharmacological strategies; and
  - staff and family education.

- In light of the complexity of the older agitated patient, regardless of the cause, referral to specialized geriatric services or psychiatry teams should be considered.

Net Readings

1. Ontario Strategy for Alzheimer Disease and Related Dementias
   www.dementiaeducation.ca
   www.psych.org/psych_pract/treatg/pg/pg_delirium.cfm