



Dementia:

Targeting Noncognitive Symptoms



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Approximately 8% of all Canadians over age 65 meet the criteria for dementia.¹ Behavioural and psychologic symptoms of dementia (BPSD) describe a heterogeneous range of psychologic reactions, psychiatric symptoms and behaviours occurring in people with dementia of any etiology.

The lifetime prevalence of significant BPSD in patients with dementia is over 80%.² BPSD may include disturbances in perception, thought content, mood or behaviour. BPSD describes a cluster of specifically defined symptoms which include anxiety, depression, euphoria, eating and sleep disturbances, agitation, aggression, abnormal vocalization, wandering, over activity, sexual disinhibition and apathy (Table 1).

Molloy *et al.*, grouped the noncognitive symptoms of dementia into four categories to facilitate a more structured and focused approach to assessment and management (Table 2).³ Sometimes, BPSD are present even before the cognitive decline is evident.

BPSD are a major source of distress for caregivers and are the principal reasons for institutionalization of demented patients. Early recognition and appropriate treatment of dementia may help delay the emergence of behavioural problems, thus reducing caregiver burden and delaying the need for institutionalization.

Diagnosing BPSD

Many patients with dementia are unable to participate effectively in an interview. Thus, for the purpose of diagnosis, BPSD is usually identified by interviewing the primary caregivers.

A variety of tools can be used to diagnose and assess the effectiveness of treatment, including:

Barry's Behaviour

- Age: 78
- In a long-term care facility with dementia.
- During his stay at the nursing home he developed two distinct patterns of symptoms:
 1. Wandering (he would try to step outside of the facility)
 2. Inappropriate behaviour of a sexual nature (e.g., he declared that he was going to marry a female staff member)



For more on Barry, see page 84.

Table 1

Frequency of behavioural changes

Behaviour	Per cent (%)
Apathy	72
Agitation	60
Anxiety	48
Irritability	42
Depression	38
Aberrant motor behaviour	38
Disinhibition	36
Appetite changes	30
Night behaviour disturbances	24
Delusions	22
Hallucinations	10
Euphoria	2

More on Barry

- Barry is already on a cholinesterase inhibitor.
- To control his wandering and inappropriate sexual behaviour, a low dose of one atypical antipsychotic was added to his regimen.
- A social worker became involved with his care over the next month and there was a significant improvement in his behaviour.

Table 2
Categories of BPSD symptoms

1. Dysfunctional questions

- Repeating stories or questions

2. Dysfunctional activities

- Wandering
- Up at night
- Afraid to be left alone
- Apathy, withdrawn
- Wants to leave

3. Dysfunctional response

<i>Internal (Patient distress)</i>	<i>External (Caregiver distress)</i>
• Agitated	• Angry
• Crying	• Aggressive
• Frustrated	• Temper outbursts
	• Refuse to co-operate
	• Demanding
	• Embarrassing behaviour

4. Dysfunctional perception

- Hallucinations
- Delusions
- Illusions
- Paranoia

BPSD: Behavioural and psychologic symptoms of dementia

- The Alzheimer's disease assessment scale,
- the behavioural pathology in Alzheimer's disease rating,
- the Cohen-Mansfield Agitation Inventory
- the Neuropsychiatric Inventory-Questionnaire and
- the Neuropsychiatric Inventory-Nursing Home Version.

Managing the symptoms

Molloy has outlined a practical five-step approach to assessment and management of BPSD:

1. Describe the behaviour
2. Describe triggers and consequences
3. Develop realistic goals
4. Develop a care plan
5. Evaluate the treatment

BPSD symptoms can be managed by nonpharmacologic and pharmacologic means. The following are different non-pharmacologic therapies that may help BPSD symptoms:

- Psychotherapy
- Validation therapy
- Reminiscence therapy
- Therapeutic activities
- Reality orientation

Other nonpharmacologic interventions that may help BPSD symptoms include:

1. Modification of the environment:

- Adapt the environment
- Milieu therapy
- Institutional environment
- Develop and maintain routine
- Organize activities

2. Sensory intervention:

- Massage and touch therapy
- Bright light therapy
- Music therapy
- Pet therapy



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Improving symptoms like pain, social contact and sleep may also decrease BPSD in patients with dementia.

Pharmacologic therapy

Numerous pharmacologic agents are currently used to treat BPSD. They can be categorized into five main therapeutic classes:⁴

1. Antipsychotics (traditional and atypicals)
2. Cholinesterase inhibitors
3. Antidepressants (selective serotonin reuptake inhibitors [SSRIs], selective norepinephrine reuptake inhibitors [SNRIs], mirtazapine)
4. Mood stabilizers (carbamazepine, divalproex)
5. Combination treatment

1. Antipsychotics

Antipsychotics are well-established treatment for BPSD, but typical antipsychotics carry with them the risk of irreversible drug-induced movement disorders and tardive dyskinesia. The elderly are especially susceptible to this type of side-effect.

Atypical antipsychotics, unlike typical agents, affect both dopamine and serotonin and may be effective for both psychosis and aggression in these patients. Another benefit of atypical antipsychotics is that they carry a lower risk of the motor side-effect of dyskinesia compared with typical agents like haloperidol. The atypical antipsychotics work at relatively lower dosages in this population.

Katz *et al.*, in a large, double-blind, placebo-controlled study showed that risperidone, 1 mg/day, is effective for treating BPSD and side-effects are minimal.

Street *et al.*, in a double-blind, placebo-controlled study with olanzapine showed that, at low dosages (5 mg to 10 mg), olanzapine is very effective in reducing the symptoms of BPSD.⁵

2. Cholinesterase inhibitors

In reviewing the science of BPSD in dementia, it is apparent that many of the symptoms are related to acetylcholine deficiency associated with the neurohistologic changes in the brain.

Acetylcholinesterase inhibitors delay the decline of cognitive impairment in dementia patients, but also delay the emergence and improve the symptoms of BPSD.

Gauthier *et al.*, in a double-blind, placebo-controlled study of donepezil, demonstrated significant patient improvement in BPSD symptoms, specifically improvement in level of depression, dysphoria, anxiety, apathy, indifference, irritability and mood lability.⁶

Mega *et al.*, in an open-label study of donepezil, demonstrated significant improvement in delusions, agitation, depression, anxiety, apathy, disinhibition and irritability.⁷

Improvement in neuropsychiatric inventory scores have also been demonstrated in patients treated with rivastigmine. Cummings *et al.* found that treatment with galantamine reduced BPSD symptoms by 29% to 48%.⁸

3. Antidepressants

The role of antidepressants in treatment of BPSD is well-established. Patients with Alzheimer's dementia appear to have functionally hyper-responsive serotonin systems and it is not surprising that serotonin antagonists are often beneficial in management of BPSD symptoms.

People with milder forms of dementia are at increased risk of developing depression. We know that depression is relatively undertreated in the elderly, especially in those with comorbid dementia.⁹

Current antidepressants endorsed for managing geriatric depression include SSRIs, SNRIs and mirtazapine. These agents also have the potential to help improve quality of life for many patients suffering from dementia.

4. Mood stabilizers

Mood stabilizers may also be efficacious in treating BPSD, especially agitation.

Tariot *et al.* showed that in patients treated with carbamazepine, there was a decrease in agitation and hostility, as well as a decrease in demand on staff time because of agitation.¹⁰

Portsteinson *et al.*, in a study with divalproex, showed decrease in agitation in patients with dementia. However, a high proportion of treated subjects (up to 68%) also experienced side-effects.¹¹

5. Combination treatment

Because the majority of patients with Alzheimer's disease-type dementia display behavioural disturbances in addition to cognitive impairment, many have been treated concomitantly with a traditional antipsychotic and a cholinesterase inhibitor.

Combination treatments for BPSD may be efficacious, but the combination also increases the risk of reversible drug-induced movement disorders. Using a low-dose atypical antipsychotic in combination with a cholinesterase inhibitor will minimize the risk.

Zaho showed that, even though donepezil and risperidone are both metabolized through the cytochrome P450, 2D6 and 3A4 enzyme system, no significant pharmacokinetic differences occurred in risperidone or donepezil.¹² Adverse events were infrequent and mild when low-dose risperidone was used in combination with donepezil.

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