

Approach to inappropriate sexual behaviour in people with dementia

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Abstract

Objective To provide family physicians with an update on the approach to diagnosis and management of inappropriate sexual behaviour (ISB) in persons with dementia.

Sources of information MEDLINE and EMBASE were searched for relevant articles published before June 2012. No level I studies were identified; most articles provided level III evidence.

Main message Inappropriate sexual behaviour is common in people with dementia. A variety of factors (eg, cultural, religious, societal views of geriatric sexuality, medicolegal issues) might complicate evaluation of this behaviour, and must be considered to allow suitable management of individual patients. Tools to assist in documenting ISB are available. Creative nonpharmacologic interventions for ISB might be effective when tailored to individual patients. A number of drug treatments (eg, antidepressant, antiandrogen, antipsychotic, and anticonvulsant medications) have been proposed for symptoms that do not adequately respond to nonpharmacologic interventions. However, evidence to support drug treatments is limited, adverse effects remain an important consideration, and it is unclear which should be used as first-line versus second-line treatments.

Conclusion Although there is no empirically established treatment algorithm for dementia-related ISB, existing literature provides some evidence for various nonpharmacologic and pharmacologic treatments. Further high-quality research is urgently needed to guide family physicians who manage patients with dementia-related ISB.

A broad spectrum of behavioural and psychological symptoms can develop in Alzheimer disease and related dementias, and increase the risk of poor outcomes for both patients and their caregivers.^{1,2} While dementia is usually accompanied by apathy and decreased sexual interest,^{3,4} disinhibition and inappropriate expressions of sexuality can also emerge.^{4,5} Inappropriate sexual behaviour (ISB) can be very troubling for family members and other caregivers and can present substantial challenges for the treating clinician.

All individuals—regardless of their age or medical condition—need love, touch, companionship, and intimacy.⁶ Clinicians should look past societal stereotypes of elderly people as asexual beings, as these stereotypes can cause negative attitudes toward healthy expressions of sexuality. Care must be taken not to pathologize appropriate sexual behaviour.

Perceptions of what constitutes appropriate behaviour vary between individuals, and might be influenced by a host of factors, such as religious beliefs or prevailing societal views of elderly persons.⁶⁻⁸ The effect of sexual behaviour on others is especially relevant in the nursing home setting, where there is relatively little privacy and many different attitudes toward sexuality. Examples of ISB include lewd or suggestive language, implied sexual acts (eg, requesting unnecessary genital care, viewing pornography in public), and overt sexual acts (eg, touching, grabbing, or disrobing of self or others, public masturbation).

In this article, we provide an update on the evaluation and management of dementia-related ISB. Details regarding

KEY POINTS Caution is needed when evaluating inappropriate sexual behaviour to ensure that events have not been perceived incorrectly, and that treatment is in fact warranted. An initial careful evaluation and nonpharmacologic treatments should precede attempts to treat behaviour with medications. No randomized controlled trials of treatments of dementia-related inappropriate sexual behaviour have been reported. We must instead rely on evidence from case reports and a few small studies (ie, level II or III evidence). When using a pharmacologic treatment, keep in mind the drug's toxicity profile, communicate the potential for benefits and harms to patients and caregivers, and carefully document these discussions.

This article has been peer reviewed.
Can Fam Physician 2013;59:255-60

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the epidemiology and pathophysiology of ISB are available from **CFPlus**.*

Case

Mr A. is an 84-year-old married man with moderately severe Alzheimer disease. He has been living in a nursing home for the past 2 years. He begins approaching female nursing home residents with sexual suggestions, which is upsetting for his family. Despite a move to a different floor, he continues to make inappropriate verbal and sometimes physical sexual advances toward female residents and staff. Behavioural strategies produce limited success. Nursing staff and his family ask you for something to help control Mr A.'s ISB.

Sources of information

MEDLINE and EMBASE were searched for relevant articles published before June 2012. Reference lists of pertinent papers were also searched to identify other relevant articles for inclusion. Levels of evidence were cited where appropriate. No level I studies were found, and most articles provided only level III evidence (eg, case reports). One exception was a controlled case series (level II evidence).⁹

Main message

Evaluation of ISB can have complex ethical and medico-legal implications.⁶⁻⁸ For example, some nursing home residents might agree to involvement in sexual activities but lack the capacity to provide meaningful consent to such involvement; they are therefore vulnerable to abuse by sexually disinhibited residents. An approach to assessing capacity to engage in a sexual relationship is detailed in **Box 1**.¹⁰

To guide optimal management of ISB, the evaluation should include a thorough medical history and physical examination and targeted laboratory testing.¹⁰ Targeted laboratory testing should be guided by the clinical evaluation. Valuable collateral history can be obtained from family members, regular caregivers, or other nursing home residents (**Box 2**).¹⁰ The evaluation should aim to uncover evidence of a mood disorder, psychosis, substance use disorder (eg, alcohol), attention-seeking behaviour, or long-standing hypersexual personality traits, as each of these conditions warrants a distinct approach to management. The history should also cover specifics of the demonstrated behaviour, such as potential precipitants and consequences. Precipitants could include environmental or emotional triggers, misinterpretation of nonsexual acts (eg, routine nursing

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Box 1. Assessment of competency to engage in a sexual relationship

Patient's awareness of the relationship

- Is the patient aware of who is initiating sexual contact?
- Is delusion or misidentification affecting the patient's choice (eg, is the patient mistaking the other person for his or her spouse)?

Can the patient state what level of sexual intimacy he or she would be comfortable with?

- Can the patient avoid exploitation?
- Is the behaviour consistent with previously held beliefs and values?
- Does the patient have the capacity to say no to uninvited sexual contact?

Is the patient aware of potential risks?

- Does the patient realize that the relationship might be time-limited (eg, if a placement is temporary)?
- Can the patient describe how he or she will react when or if the relationship ends?

Adapted from Series and Dégano with permission from the Royal College of Psychiatrists.¹⁰

Box 2. Assessment of inappropriate sexual behaviour

- What form does the behaviour take?
- In what context?
- How frequent is it?
- What factors contribute?
- Is it a problem? For whom?
- What are the risks involved? To whom?
- Are the participants competent?

Adapted from Series and Dégano with permission from the Royal College of Psychiatrists.¹⁰

care), or medications (eg, benzodiazepines, dopamine agonists, androgen supplements).

Seeking to understand the motivation for possible inappropriate public displays can sometimes yield unexpected and nonsexual causes that can be more easily addressed. For example, patients with dementia might fail to wear appropriate clothing in public simply because they have forgotten to get dressed or because they are too warm. Their cognitive impairment might result in a lack of recognition of this behaviour as potentially provocative or offensive to others. In this case, it might be useful to provide the patient with clothing that opens in the back so that it cannot be easily removed.⁸

The sudden emergence of ISB can herald delirium, and a comprehensive approach is needed to rule out underlying medical illness. Careful neurologic and cognitive assessment as well as genital examination

might also help uncover contributors to ISB (eg, urinary tract infection, fecal impaction).

The evaluation should be carefully documented to help support the rationale for subsequent treatments. The St Andrew's Sexual Behaviour Assessment (SASBA) instrument was developed to be a valid and reliable tool to measure and record ISB (level II evidence).¹¹⁻¹³ The SASBA scale permits continuous direct observation of 4 categories of ISB, each with 4 levels of severity. The SASBA might help clinicians to standardize their documentation of ISB.

Management principles

Unfortunately, the literature on management of dementia-related ISB is sparse, and the few existing studies have important limitations. Most articles on this topic are based on single case reports or small case series. No randomized controlled trials (RCTs) have been published to establish the efficacy or safety of the many proposed treatments of ISB, and it is unclear in which order these treatments should be used when patients fail to respond to initial treatments. The generalizability of the existing literature is questionable; for example, most published case reports involve men, and it is uncertain how women might respond to some proposed treatments.

Nonetheless, guidance can be given by extrapolating from what is known about the management of other behavioural and psychological symptoms of dementia.¹ For example, clinicians should use a sequential approach that starts with nonpharmacologic management strategies. Discontinuing medications that worsen disinhibition (eg, benzodiazepines, dopamine agonists) might reduce ISB. Drug treatments should be prescribed only if symptoms fail to respond to more conservative measures, as many medications have important toxicities that can offset their potential benefits. Clinicians should select a target symptom and reasonable timeline to help them gauge whether a new treatment has proven effective. Tucker¹⁴ and Lothstein et al¹⁵ have proposed algorithms for treatment of ISB (level III evidence).

Nonpharmacologic management

Nonpharmacologic interventions need to be adapted to the individual patient. Common examples include removal of precipitating factors, distraction strategies, and opportunities to relieve sexual urges. In the nursing home setting, it might be necessary to separate a patient from another resident or staff member when the other person appears to be the trigger for ISB (eg, by reminding the patient of his spouse). Separation can be achieved by moving one resident to another floor in the nursing home. Distraction with other activities can sometimes help (eg, participation in crafts to occupy the hands and prevent inappropriate touching or public masturbation).

In a controlled case series, Bardell et al found consistent redirection and enhanced communication through an interpreter to be effective approaches (level II evidence).⁹ Referral to specialized geriatric services might be effective when available. Although not specific to ISB, an Australian study compared usual care for dementia-related behaviour to individualized assessment and care delivered by a multidisciplinary team (eg, a nurse with access to geriatric psychiatry and geriatric medicine specialists). Access to the multidisciplinary team was effective in reducing dementia-related behaviour and was associated with less use of psychotropic medications (level II evidence).¹⁶

In some cases, creativity might lead to success without the need to resort to medication. For example, a case report describes the provision of a 3-foot-tall stuffed doll to a man with dementia who was sexually aggressive toward women in his nursing home. His ISB stopped after introduction of the doll, as it provided an alternate means of sexual release (level III evidence).¹⁷

Pharmacologic management

Patients with persistent ISB might require the addition of drug treatment. Many different medications have been proposed for this treatment, and clinicians must carefully weigh the potential benefits and harms of each (Table 1). Pharmacologic treatments should be tailored to the individual patient. Comorbid conditions might serve to guide decisions (eg, estrogens should be avoided in patients with a history of venous thromboembolism). As all pharmacologic treatments of ISB represent off-label prescribing, it is important to maintain communication with patients and family members about the potential benefits and risks of treatment and to document these discussions. Hormonal treatments might be controversial, as they are sometimes viewed as a form of chemical castration.¹⁸

Antidepressant drugs. Many antidepressant drugs are known to provoke sexual dysfunction, and thus it is not surprising they have been proposed to treat ISB. Antidepressant treatment has the potential added benefit of treating other dementia-related behavioural disturbances.¹ Selective serotonin reuptake inhibitors (SSRIs) are often recommended as first-line agents for ISB treatment because of perceived safety.¹⁵ Case reports have described successful use of various antidepressant drugs (level III evidence). In some case reports, paroxetine and citalopram had benefits within 1 week of treatment and lasting effects were observed at follow-up several months later.¹⁹⁻²¹ However, others found citalopram had limited efficacy.⁹ Mirtazapine was described as partly effective in one case.⁹ The tricyclic antidepressant clomipramine has been reported to reduce sexually inappropriate behaviour,²² although use of tricyclic antidepressant drugs is usually discouraged for older

Table 1. Pharmacologic treatments proposed for ISB: Evidence supporting these drug treatments is level II or level III.

DRUG CLASS	STUDIED DRUG (FORMULATION AND DOSAGE)	POTENTIAL ADVERSE EFFECTS
Antidepressants	SSRIs (20 mg oral paroxetine once daily, 20 mg oral citalopram once daily)	Nausea, tremor, hyponatremia
	15–30 mg mirtazapine nightly	Sedation, weight gain, myelosuppression
	150 mg oral clomipramine once daily	Orthostatic hypotension, urinary retention, constipation, worsening cognition
	100–500 mg oral trazodone once daily	Sedation, orthostatic hypotension, priapism
Antiandrogens	100–500 mg IM medroxyprogesterone acetate weekly	Fatigue, weight gain, hot or cold flashes, depression, elevated blood glucose, insomnia
	10 mg oral cyproterone acetate once daily	Gynecomastia, galactorrhea, worsening diabetes control, depression, osteoporosis, adrenal insufficiency on withdrawal, hepatotoxicity (liver enzymes should be checked if it is used)
	5 mg oral finasteride once daily	Gynecomastia, testicular pain, depression
Estrogens	0.625 mg oral conjugated estrogen once daily	Weight gain, depression, gynecomastia, venous thromboembolism
	0.05–0.1 mg/d estrogen transdermal patch	
	1 mg oral diethylstilbestrol once daily	
GnRH analogues	7.5 mg IM leuprolide monthly	Weight gain, bone pain, osteoporosis, pituitary apoplexy (rare)
Antipsychotics	1.5–3 mg oral haloperidol once daily	Sedation, extrapyramidal symptoms, falls, weight gain, ventricular arrhythmias
	25 mg oral quetiapine once daily	
Anticonvulsants	100–300 mg oral gabapentin 3 times daily	Sedation, depression, ataxia, tremor Sedation, depression, motor ataxia, hyponatremia, Stevens–Johnson syndrome, agranulocytosis, hepatotoxicity Use of carbamazepine requires monitoring with regular laboratory testing
	200 mg oral carbamazepine once daily	
Cholinesterase inhibitors	1.5–6 mg rivastigmine twice daily	Nausea, urinary incontinence, syncope Potential for emergence of hypersexuality
	5–10 mg oral donepezil once daily	
H ₂ receptor blockers	400–1600 mg/d oral cimetidine (nightly or divided doses; eg, 400 mg twice daily)	Worsening cognition, dizziness, multiple drug–drug interactions
-blockers	5–20 mg oral pindolol twice daily	Hypotension, fatigue, bradycardia, bronchospasm
	40–80 mg oral propranolol twice daily	
Antifungals	100–200 mg ketoconazole once daily	Sedation, headache, rash, photosensitivity, gastrointestinal upset, pruritus, hepatotoxicity
Potassium-sparing diuretics	12.5 mg spironolactone once daily	Hyperkalemia, gynecomastia, change in hair growth, upper gastrointestinal ulcers, agranulocytosis

GnRH—gonadotropin-releasing hormone, IM—intramuscular, ISB—inappropriate sexual behaviour, SSRI—selective serotonin reuptake inhibitor.

patients with dementia because of adverse effects. The antidepressant trazodone improved ISB in 4 patients with dementia.²³

Hormonal treatments.

Antiandrogens: Medroxyprogesterone acetate is a synthetic progestin used for several indications in women and for lowering testosterone production in men. Several case reports (level III evidence)^{24–27} and one small controlled case series (level II evidence)⁹ describe successful use of medroxyprogesterone acetate for dementia-related ISB.

Cyproterone acetate is another synthetic progestin and antiandrogen that works by blocking androgen receptors.

One report described successful use of low-dose oral cyproterone acetate (10 mg daily) for 2 male patients with dementia-related ISB that had not responded to treatment with antipsychotic or sedative medication (level III evidence).²⁸ Behaviour re-emerged in both patients when attempts were made to reduce the dose.

Finasteride is a 5 α -reductase inhibitor that blocks conversion of testosterone to dihydrotestosterone. This drug is commonly used to treat benign prostatic hyperplasia, and has the potential to produce low libido and erectile dysfunction. A case series describes use of finasteride to treat ISB in 11 elderly men with vascular dementia.²⁹ Inappropriate sexual behaviour disappeared in 6 of the 11 men within 8 weeks of treatment, while

the other 5 patients required alternative treatments (eg, propranolol, quetiapine).

Estrogens: Estrogens decrease secretion of luteinizing hormone and follicle-stimulating hormone, which lowers testosterone production and typically results in reduced libido. Lothstein et al describe the successful use of estrogen to manage sexual disinhibition in 39 elderly patients who had not responded to treatment with SSRIs (level III evidence).¹⁵ No adverse effects were reported but no time frame for response to treatment was described. Lothstein et al propose a treatment algorithm for ISB that begins with SSRIs (discussed above) and moves to either estrogen or antiandrogen treatment if behaviour does not respond to SSRIs.¹⁵ Another case report described using 1 mg of the synthetic estrogen diethylstilbestrol daily to reduce sexual aggression displayed by an elderly man with dementia (level III evidence).³⁰

Leuprolide: Leuprolide is a gonadotropin-releasing hormone analogue that downregulates the secretion of luteinizing hormone and follicle-stimulating hormone, leading to eventual suppression of ovarian and testicular steroidogenesis and reduced libido. A case report describes the addition of leuprolide to propranolol in a patient with dementia who demonstrated a variety of behaviour disturbances (level III evidence).³¹ Increased appetite resulting in substantial weight gain was reported. Leuprolide is expensive, typically costing hundreds of dollars per injection.

Antipsychotic drugs. A number of RCTs have evaluated antipsychotic drugs to treat behavioural symptoms in dementia, but none of these trials focused specifically on sexual behaviour. Overall, the benefits of antipsychotic drugs are modest and often offset by serious adverse effects including sedation, worsening mobility and falls, and increased overall mortality.³² Nonetheless, case reports have described treatment of ISB with low doses of the typical antipsychotic haloperidol,³³ and the atypical antipsychotic quetiapine (level III evidence).^{34,35}

Anticonvulsant drugs. Gabapentin can cause reduced libido, anorgasmia, and erectile dysfunction. Case reports have described reduced sexual behaviour in patients with dementia treated with gabapentin (level III evidence).³⁶⁻³⁸ However, the medical literature about gabapentin is complex, and there is skepticism about the effectiveness of this drug for some of its many off-label uses.³⁹ Carbamazepine use has been associated with lower testosterone levels in young women with epilepsy,⁴⁰ and case reports describe its use as an option for sexual disinhibition in dementia.^{41,42} All anticonvulsant drugs carry warnings about their potential to induce depression and suicidal thoughts. For these reasons, anticonvulsant drugs are typically reserved for ISB that fails to respond to other treatment options.

Cholinesterase inhibitors. Studies evaluating the effects of cholinesterase inhibitors on dementia-related ISB have had conflicting results. One case report suggested reduction of ISB with rivastigmine treatment,⁴³ while several other reports describe the emergence of hypersexuality in patients taking donepezil (level III evidence).^{44,45}

Miscellaneous treatments and combination therapy. A variety of other medications, most with antiandrogen effects, have been proposed (level III evidence). These agents include the H₂ receptor blocker cimetidine,⁴⁶ β-blockers (eg, propranolol,³¹ pindolol⁴⁷), ketoconazole,⁴⁶ and spironolactone.⁴⁶

Combination therapy has been suggested for persistent behavioural problems. Indeed, many case reports describe various combinations of medications to treat ISB (level III evidence).¹⁸ Clinicians should be careful when using combinations, especially ones that involve carbamazepine or cimetidine, as these drugs are involved in a number of clinically important drug-drug interactions.

Conclusion

The evaluation and management of ISB offers many challenges. Although there is no empirically established treatment algorithm for dementia-related ISB, existing literature provides some weak evidence for various nonpharmacologic and pharmacologic treatments. Key principles of management include carefully documented evaluation, treatment tailored to the individual patient, and initial use of nonpharmacologic interventions. Many proposed treatments either appear to have limited efficacy (eg, SSRIs) or have potentially serious adverse effects (eg, antipsychotic drugs). Unfortunately, current evidence is largely based on case studies rather than RCTs. Further high-quality research is urgently needed to guide family physicians who manage patients with dementia-related ISB. ✱

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Contributors

All authors contributed to the literature review and interpretation, and to preparing the manuscript for submission.

Competing interests

None declared

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The Care of the Elderly series was developed as an initiative of the Continuing Professional Development Committee of the Canadian Geriatrics Society in collaboration with *Canadian Family Physician* to provide articles on geriatric topics written by family physicians for family physicians.