



Canadian Geriatrics Society

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## CHOOSING WISELY CANADA: GERIATRICS

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- 1. Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.**  
Adrian Wagg
- 2. Don't use benzodiazepines or other sedative hypnotics in older adults as first line choice of insomnia, agitation or delirium.**  
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- 3. Don't recommend percutaneous feeding tubes in patients with advanced dementia: instead offer oral feeding.**  
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- 4. Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia (BPSD).**  
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- 5. Avoid using medications known to cause hypoglycemia to achieve hemoglobin A1c <7.5%; in many adults age 65 and older moderate control is generally better.**  
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## Introduction

The Canadian Geriatrics Society ([www.canadiangeriatrics.ca](http://www.canadiangeriatrics.ca)) has been proud to partner with Choosing Wisely Canada (CWC), a campaign to help physicians and patients engage in conversations about unnecessary tests, treatments or procedures. CWC was launched in 2012 with 6 specialties making recommendations on "Five Things Physicians and Patients Should Question." It has now grown to include a total of 166 recommendations from 29 specialty associations.

In Geriatrics, the Five Things Physicians and Patients Should Question include:

1. Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present;
2. Don't use benzodiazepines or other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium;
3. Don't recommend percutaneous feeding tubes in patients with advanced dementia, instead offer oral feeding;
4. Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia; and
5. Avoid using medications known to cause hypoglycemia to achieve hemoglobin A1c <7.5% in many adults age 65 and older; moderate control is generally better.

This issue of the *Canadian Geriatrics Society Journal of CME* ([www.geriaticsjournal.ca](http://www.geriaticsjournal.ca)) is devoted to Five Things that Physicians and Patients Should Question in Geriatrics. The contributors to this issue have all been involved in the development of the recommendations and have collaborated to provide an article outlining the recommendations and the rationale behind them.

The Choosing Wisely Canada website ([www.choosingwiselycanada.org](http://www.choosingwiselycanada.org)) includes the physician recommendations from all participating societies. Some of the other specialty societies have recommendations that may be of relevance to our patient population, such as testing testosterone levels, x-rays in back pain with no red flags, routine self-glucose monitoring in adults with stable type 2 diabetes or the use of long term proton pump inhibitors to name a few. The Canadian Geriatrics Society recommendations can be found at [www.choosingwiselycanada.org/recommendations/geriatrics/](http://www.choosingwiselycanada.org/recommendations/geriatrics/)

The CWC website also has patient materials that physicians might find helpful in engaging patients in these discussions that promote truly informed consent (see [www.choosingwiselycanada.org/materials/](http://www.choosingwiselycanada.org/materials/)). There are patient materials that support the CGS recommendations including:

1. [Antibiotics for urinary tract infections in older people: When you need them – and when you don't](#)
2. [Treating disruptive behaviour in people with dementia: Antipsychotic drugs are usually not the best choice](#)
3. [Insomnia and anxiety in older people: Sleeping pills are usually not the best solution](#)
4. [Feeding tubes for people with Alzheimer's disease: When you need them – and when you don't](#)

We hope you find this issue illuminating and encourage you to check out the CWC website and review other recommendations.

## 1. Don't use antimicrobials to treat bacteriuria in older adults unless specific urinary tract symptoms are present.

Despite being common in older adults, urinary tract infection (UTI) is poorly understood and often incorrectly diagnosed; furthermore, its assessment and management lacks a robust evidence base. Urinary tract infection requires invasion of the epithelium of the urinary tract by pathogenic bacteria; the presence of bacteria in the urine is not synonymous with UTI but UTI is a significant cause of mortality, with bacteraemic UTI carrying a mortality of up to 33% in older adults.<sup>1</sup>

The diagnosis of UTI in older persons is often challenging, with older patients being less likely to present with classical symptoms or fever<sup>2</sup>, and with asymptomatic bacteriuria being highly prevalent.<sup>3-5</sup> It has been estimated that in hospitalised older people up to half of diagnoses of UTI are incorrect.<sup>6</sup> Asymptomatic bacteriuria (ASB) too is common in older adults, with estimates of prevalence ranging from 5-20% among ambulatory older people and up to 50% of those living in institutions.<sup>5</sup> It is defined by the Infectious Diseases Society of America as 2 consecutive voided urine specimens with isolation of the same bacterial strain in quantitative counts  $<10^5$  cfu/ml in women or a single sample in men.<sup>7</sup> Repeatedly treating asymptomatic bacteriuria is of no benefit either in terms of symptoms or mortality.<sup>5,7,8</sup> Asymptomatic bacteriuria in men has been shown to resolve spontaneously in 76% of cases.<sup>4</sup> Unnecessary antibiotics are associated with significant risks including *Clostridium difficile* infection as well as the development of resistant bacteria. Resistance rates to uropathogens are rising, with over 25% of *E. coli* resistant to trimethoprim in the United States.<sup>9</sup> Antibiotic stewardship programs and adherence to local antibiotic guidelines are crucial.

Fundamentally, the diagnosis of UTI is a clinical one, based on symptoms and signs. UTI should be considered in those with a fever and who do not have 2 symptoms or signs of a non-urinary infection, such as cough, sputum, diarrhea, rash or swelling, and who do have one or more symptoms of UTI, such as dysuria, urgency, flank or suprapubic pain, incontinence, frequency or haematuria. In individuals with a urinary catheter, UTI should be considered in those with fever or in apyrexial individuals with new costovertebral tenderness, delirium or rigors. In the presence of sepsis, and in particular when presenting with confusion or tachypnea (possibly as a result of metabolic acidosis), the possibility of a urinary source should be considered, urine cultured and appropriate antimicrobial treatment given.<sup>10</sup>

There is a pervasive and persistent belief that urinary tract infection in older people presents with non-specific symptoms of lethargy, malaise and anorexia, despite being demonstrated to be untrue almost 30 years ago.<sup>11</sup> Urinary tract infection typically presents with dysuria, frequency, urgency or incontinence and the absence of symptoms ascribable to the lower urinary tract should prompt a search for an alternative explanation, even in the presence of a positive urine dip or urine culture. Older women with UTI are more likely than younger women to present with urgency, painful voiding and incontinence rather than increased urinary frequency.<sup>12</sup> Urinary tract infection is also often held to be a cause of delirium; however, a systematic review of the evidence for this found the strength of association between UTI and delirium "modest" at best, and bacteriuria without symptoms of UTI – dysuria, frequency, bladder discomfort or fever – was not a likely cause of delirium.<sup>13</sup>

In residents of nursing homes only those with convincing signs of active infection should be treated with antibiotics.<sup>14</sup> However, this can lead to a considerable diagnostic dilemma, particularly in cognitively impaired persons (in nursing homes and other settings) unable to communicate their symptoms, where things are "not quite right" and there is pyuria on dipstick urinalysis. Pragmatically, if a thorough search for alternative causes for being "not quite right" has been performed, then a clinical decision based upon the best interests of the patient needs to be made.

The aim of this review is not to outlaw the prescribing of any antibiotics but to move away from the default position, so often seen, of a positive urinalysis being treated without thought as to its relevance. To learn more regarding this topic and urinary incontinence in general please go to [Urinary Incontinence in the Frail Elderly](#).

## **2. Don't use benzodiazepines or other sedative hypnotics in older adults as first line choice for insomnia, agitation or delirium.**

Benzodiazepines and other sedative hypnotics continue to be prescribed for older adults despite frequent adverse events. For every 13 people treated with a sedative hypnotic 1 will experience an improvement in their quality of sleep, whereas 1 person will experience harm for every 6 people prescribed a sedative.<sup>1</sup> Specifically, sedative hypnotic use for the management of insomnia has been associated with increased risk of adverse cognitive (OR 4.78 [95% CI: 1.47-15.47]) and psychomotor outcomes (OR 2.25 [95% CI: 0.93 - 4.51]).<sup>1</sup>

A literature review of medications used to treat insomnia, including non-benzodiazepine Z-drugs, found a two-fold increased risk of falls and hip fractures with the use of these medications among older adults.<sup>2</sup> Zolpidem has been found to increase the risk of hip fracture on a similar order of magnitude as benzodiazepines.<sup>3</sup> In adults over the age of 65 years, zolpidem was associated with a greater risk of non-vertebral fracture than alprazolam and possibly lorazepam, with a similar risk of fracture to temazepam.<sup>4</sup> Furthermore, Health Canada has issued an advisory for zolpidem following reports of complex sleep-related behaviours.<sup>5</sup> Other psychotropic medications, including antidepressants and antiepileptics, were also associated with an increased risk of falls.<sup>2</sup> For a comprehensive review of medications that can contribute to falls see [Interventions to Reduce Medication-Related Falls](#).

The American Geriatrics Society 2012 Updated Beers' Criteria makes a strong recommendation based on high quality evidence to avoid all type of benzodiazepines (short and long-acting) for the treatment of insomnia, agitation and delirium in older adults. Notable exceptions include the use of benzodiazepines for the treatment of severe generalized anxiety disorder, alcohol or benzodiazepine withdrawal, delirium tremens, rapid eye movement sleep disorders and end-of-life care.<sup>6</sup> The Updated Beers' Criteria also makes a strong recommendation, based on moderate quality evidence, to avoid long-term use (>90 days) of Z-drugs due to similar risk of adverse events and only minimal improvement in sleep parameters.<sup>6</sup> For more resources on polypharmacy see the Medication Optimization/Polypharmacy section at [www.geriatricsjournal.ca](http://www.geriatricsjournal.ca).

Hospital prescribing practices can have implications for long-term sedative use. Among persons discharged from hospital in the preceding 30 days, individuals were more likely to discontinue regular sleep medication use if they did not receive them during the hospitalization

(OR 3.58 [95% CI: 1.56 - 8.21]). Similarly, individuals were more likely to initiate regular use of sleep medications if they were initiated in hospital (OR 3.57, 95% CI: 1.66 - 8.08).<sup>7</sup>

There is a paucity of evidence to support the use of other pharmacological agents to help promote sleep. There is currently insufficient safety and efficacy data to support the use of melatonin, ramelteon, diphenhydramine and doxepin, and there are no studies on the use of atypical antipsychotics, trazodone or other antidepressants for the treatment of insomnia, despite the use of these medications for their sedating properties.<sup>8</sup>

A recently published cohort study found that individuals with the highest cumulative exposure to anticholinergic medications had a statistically significant increased risk of dementia (adjusted hazard ratio 1.54 [95% CI: 1.21-1.96]), and in particular Alzheimer Disease (adjusted HR 1.63 [95% CI: 1.24 - 2.14]) compared with those with no use.<sup>9</sup> High cumulative exposure in this study was the equivalent of three years of daily use of a tricyclic antidepressant, antimuscarinic or first generation antihistamines.<sup>9</sup> These three classes of medication together accounted for greater than 90% of anticholinergic exposure in the study.<sup>9</sup>

Effective strategies for discontinuing sedative hypnotic medications include cognitive-behavioural therapy, brief behavioural intervention and tapering protocols, both alone and in combination.<sup>8</sup> Readers are directed to an article on discontinuing psychotropic medications (see [Strategies for Discontinuing Psychotropic Medications](#)).

Cognitive-behavioural therapy and brief behavioural intervention have also been found to be effective therapies to help manage insomnia. Brief behavioural intervention consists of a series of brief sessions that promote good sleep hygiene. Exercise, such as tai chi, can also help address insomnia.<sup>10,11</sup> Among persons with dementia, sleep education provided to caregivers may help to improve sleep.<sup>12</sup> Overall, non-pharmacological therapies should be considered as first-line treatment in the management of insomnia. For more information on the diagnosis and treatment of insomnia refer to the relevant article at [www.geriatricsjournal.ca](http://www.geriatricsjournal.ca).

### **3. Don't recommend percutaneous feeding tubes in patients with advanced dementia; instead offer oral feeding.**

The prevalence of dementia in Canada has now risen to over 700,000 cases and Canadian physicians will need to address associated care needs<sup>1</sup>. In the advanced stages of dementia, almost all patients develop swallowing problems. A large prospective cohort study following 323 nursing home residents with a Mini-Mental State Examination score of 5 or less, found that 85% had eating difficulties and their 6-month mortality was almost 40%<sup>2</sup>. Given the limited life expectancy of patients with advanced dementia, the risks and benefits of all medical interventions must be carefully weighed.

While feeding tubes can help some patients with localized swallowing problems, such as those with cerebrovascular accidents, there is now almost general consensus that feeding tubes do not benefit patients with advanced dementia. Examining the evidence from observational controlled studies involving nasogastric tubes, percutaneous endoscopic gastrostomy tubes or a combination of types of feeding tubes, a Cochrane review found insufficient evidence that feeding tubes enhance survival or quality of life, or that they reduce pneumonia or pressure ulcers<sup>3</sup>.

Careful hand-feeding with an appropriate food texture may be preferable to tube-feeding. Although a direct comparison is not available, evidence suggests that careful hand-feeding is as good as tube-feeding in terms of complications and survival<sup>4</sup>. Hand-feeding may be best provided in small quantities, with more frequent administration intervals, to minimize choking. Although this is more time consuming, hand-feeding does provide caregivers a way to express care and allows patients the enjoyment of natural eating<sup>5</sup>.

Patients at the end of life may feel only transient hunger and thirst<sup>6</sup>. Family members and substitute decision-makers are often concerned about this when deciding on feeding interventions. Withholding hydration and nutrition in end-of-life situations accompanying advanced dementia is felt to not be associated with discomfort so long as adequate mouth care is provided<sup>7</sup>.

Most feeding tubes (68%) are given to residents of nursing homes during an admission to hospital for acute care<sup>8</sup>. If patients are transferred to the emergency room in a state of delirium related to an acute medical issue, then the extent of the patient's underlying dementia may be unclear to the hospital staff. Even if there is a diagnosis of dementia on the transfer note, because there is a wide spectrum of severity in dementia, a feeding tube may be initiated. Deciding on its removal at a later time can be difficult for a substitute decision-maker.

Family physicians in the outpatient setting and those attending long term care facilities in Canada who have developed significant relationships with their elderly patients may be in the ideal position to initiate discussions regarding advance directives. These discussions should include family members and those chosen as substitute decision-makers. Feeding decisions are best discussed well before an admission to

hospital. A randomized controlled trial showed that substitute decision-makers had more knowledge and less decisional angst about decisions pertaining to feeding options after watching an educational video ([decisionaid.ohri.ca/tools.html](http://decisionaid.ohri.ca/tools.html))<sup>9</sup>. Decision aids such as this may enhance the quality of subsequent discussions. For more information on Advance Care Planning go to [www.advancecareplanning.ca](http://www.advancecareplanning.ca).

#### **4. Don't use antipsychotics as first choice to treat behavioural and psychological symptoms of dementia (BPSD).**

*"People with dementia often exhibit challenging behavioural symptoms such as aggression and psychosis. In such instances, antipsychotic medicines may be necessary, but should be prescribed cautiously as they provide limited benefit and can cause serious harm, including premature death. Use of these drugs should be limited in dementia to cases where nonpharmacologic measures have failed, and where the symptoms either cause significant suffering, distress and/or pose an imminent threat to the patient or others. A thorough assessment that includes identifying and addressing causes of behaviour change can make use of these medications unnecessary. Epidemiological studies suggest that typical (i.e., first generation) antipsychotics (i.e., haloperidol) are associated with at least the same risk of adverse events. This recommendation does not apply to the treatment of delirium or major mental illnesses such as mood disorders or schizophrenia."<sup>1</sup>*

This Choosing Wisely recommendation was made by the Canadian Psychiatric Association and the Canadian Academy of Geriatric Psychiatry. In similar (but fewer) words, the Canadian Geriatric Society also recommended against using antipsychotics as first line therapy for neuropsychiatric symptoms in dementia<sup>2</sup> and in fact, virtually identical but separate recommendations for Choosing Wisely US were made by the American Psychiatric Association<sup>3</sup>, the American Geriatric Society<sup>4</sup> and the American Association of Medical Directors<sup>5</sup>. So, if everyone agrees, why was it so important for all these prestigious, important organizations to make similar recommendations? If you are a clinician that treats people with Alzheimer's disease or other dementias, you are keenly aware of how common agitation, aggression psychosis and anxiety are in these patients, how much suffering they cause for patients, families and caregivers, and how they contribute to the cost of care and increase the risk of institutionalization.<sup>6</sup>

With respect to all these Choosing Wisely recommendations, here are the facts:

- 1) Antipsychotics, both typical and atypical, are the best studied pharmacological interventions to treat agitation, aggression and psychosis in dementia and provide modest, but reliable benefit.<sup>7</sup>
- 2) Antipsychotics are associated with significant potential adverse events including increased risk of mortality (NNH = 100), cerebrovascular adverse events, extrapyramidal symptoms, falls and hip fractures, worsening cognitive impairment, weight gain and metabolic problems (e.g., hyperlipidemia and hyperglycemia). These adverse effects have been documented in randomized placebo controlled trials as well as administrative health database studies.<sup>8,9</sup>
- 3) Alternative pharmacological interventions (e.g., antidepressants, anticonvulsants etc.) have been studied in a very small number of studies, but none have demonstrated enough consistent benefit and safety to be included in evidence-based clinical practice guidelines.<sup>10</sup>
- 4) While non-pharmacological and behavioural interventions are less well studied they are probably as effective as, and certainly safer than antipsychotics. Unfortunately, it is often difficult to implement these therapies because of lack of available resources.<sup>10</sup>

These 4 "facts" have led to a situation whereby the use of antipsychotics for patients with dementia has continued to climb in spite of the Black Box warnings for cerebrovascular adverse events and mortality that were first issued by Health Canada over a decade ago.<sup>11</sup>

In order to avoid the use of antipsychotics, I recommend the "**4 -Ize/ise**" (Temporize, Optimize, Improvise and Compromise). By temporize, I mean not rushing in to prescribe any medication. Make sure the change in behaviour is not due to an inter-current medical condition or another medication. Ask the

caregiver to provide a diary for a week that records the antecedents of the behaviour, the type and severity of behaviour, and the consequences of the behaviour. Neuropsychiatric symptoms are not always persistent, and structured observation actually helps caregivers predict and deal with the behaviours. Optimize involves making sure they are benefiting from and tolerating their anti-dementia medications (cholinesterase inhibitors and/or memantine). These medications can have modest behavioural benefits. Improvise means considering behavioural interventions by utilizing day programs, home care services and support groups from the local Alzheimer Society. At times, low doses of an antidepressant like escitalopram may improve depressive symptoms, anxiety and irritability and lead to a decrease in agitation and aggression. Finally, if all else fails and there's a risk to patient and caregiver, compromise by using a low dose of an antipsychotic like risperidone, olanzapine or aripiprazole. This can be justified, as long as the caregiver has been informed of and appreciates the balance of benefits and risks. If an antipsychotic is prescribed, attempts to withdraw after a period of behavioural stability are strongly recommended.

To learn more regarding the management of Behavioural and Psychological Symptoms of Dementia (BPSD) see [Practical Tips for Recognition and Management of Behavioural and Psychological Symptoms of Demetia](#).

### **5. Avoid using medications known to cause hypoglycemia to achieve hemoglobin A1c <7.5%; in many adults age 65 and older moderate control is generally better.**

Despite having the highest prevalence of diabetes, older adults are often excluded from randomized controlled trials of diabetes treatment, and as a result there is little clinical trial data on glycemic control in this population.<sup>1</sup> The United Kingdom Prospective Diabetes Study (UKPDS) provided evidence for glycemic control in preventing microvascular complications in diabetes; however, only enrolled middle-aged patients with newly diagnosed type 2 diabetes and excluded those over the age of 65 years.<sup>1</sup>

Intense control has been consistently shown to produce higher rates of hypoglycemia. Individuals over 75 years of age have twice the rate of emergency department visits for hypoglycemia than the general population with diabetes.<sup>2</sup> Furthermore, asymptomatic hypoglycemia detected by continuous glucose monitoring is common in the elderly.<sup>3</sup> Age appears to affect the counter-regulatory response to hypoglycemia, with older adults having fewer autonomic and neuroglycopenic symptoms in response to hypoglycemia than do middle-aged patients.<sup>1</sup>

The Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial, the Action in Diabetes and Vascular Disease: Preterax and Diamicon MR Controlled Evaluation (ADVANCE) trial and the Veterans Affairs Diabetes Trial (VADT) were designed to evaluate the role of glycemic control in preventing the complications of cardiovascular disease in middle aged and older patients with type 2 Diabetes Mellitus.<sup>1</sup> ACCORD randomized over 10,000 patients (mean age 62 years) to intensive glycemic control (A1c <6%) versus more modest control (7-7.9% in control arm). The trial was discontinued early (at 3.5 years) due to higher mortality rates in the intensive therapy group.<sup>4</sup> VADT randomized over 1700 veterans with type 2 diabetes to intensive or standard glucose control (intensive = 1.5% reduction in A1c with median A1c achieved = 6.9%, compared with standard therapy = 8.4%). VADT found no significant between group differences in the primary outcomes of MI, stroke or death from cardiovascular causes, and no significant differences in microvascular complications.<sup>5</sup> ADVANCE randomized over 11,000 patients to either standard therapy or intensive glucose control (gliclazide plus other drugs as needed to achieve an A1c target <6.5%). The trial found no significant difference in major macrovascular events, death from cardiovascular causes or death from any cause, but intensive glucose control did result in a significant reduction in the incidence of nephropathy (4.1% versus 5.2%; hazard ratio 0.79; 95% CI: 0.77 - 0.97).<sup>6</sup> A U-shaped association has been found between A1c and mortality. Both low and high mean A1c values have been shown to be associated with increased all-cause mortality and cardiovascular disease events.<sup>7</sup>

Given the long time-frame (8 years)<sup>8</sup> to achieve theorized benefit of intense control, glycemic targets should reflect patient goals, health status and life expectancy. Reasonable glycemic targets of 7-7.5% in healthy older adults with long life expectancy, 7.5-8% in those with moderate comorbidity and a life expectancy <10 years, and 8-8.5% in those with multiple comorbidities and shorter life expectancy are recommended in the Canadian Diabetes Association Clinical Practice Guidelines.<sup>9</sup>

Treatment approaches may be individualized based on the patient's cognitive ability and degree of independence. In older adults with cognitive impairment, glucose monitoring and insulin adjustments are more difficult and potentially prone to error.<sup>1</sup> The clock-drawing test can be used to predict which elderly patients may have difficulty with insulin management.<sup>10</sup> When it comes to oral hypoglycemic agents, sulfonylureas should be used with caution because of the exponential increased risk of hypoglycemia with advancing age.<sup>9</sup>

To learn more regarding diabetic control in older patients, go to [Management of Diabetes Among Frail Older Adults](#).

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#### **4. DON'T USE ANTIPSYCHOTICS AS FIRST CHOICE TO TREAT BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA (BPSD)**

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4. American Geriatrics Society. Ten Things Physicians and Patients Should Question. <http://www.choosingwisely.org/societies/american-geriatrics-society/>
5. AMDA – The Society for Post-Acute and Long-Term Care Medicine. Ten Things Physicians and Patients Should Question. <http://www.choosingwisely.org/societies/amda-the-society-for-post-acute-and-long-term-care-medicine/>
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**5. AVOID USING MEDICATIONS KNOWN TO CAUSE HYPOGLYCEMIA TO ACHIEVE HEMOGLOBIN A1C <7.5% IN MANY ADULTS AGE 65 AND OLDER; MODERATE CONTROL IS GENERALLY BETTER**

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