



Careful medication
selection and dosing
can minimize adverse
effects of long-term
antipsychotic use

Schizophrenia in older adults

How to adjust treatment to address aging patients' changing symptoms, comorbidities

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Ms. M, age 68, seeks treatment for stress and anxiety after her sister has a stroke. Ms. M has chronic paranoid schizophrenia, and her sister has been Ms. M's primary support since the onset of illness in her late 20s. Ms. M lives in a supported housing community. Her last psychiatric hospitalization was 16 years ago; for the past 15 years she has been stable on haloperidol, 20 mg/d. Ms. M also takes diphenhydramine, 50 mg at bedtime, to help her sleep.

Ms. M is hypertensive but does not have diabetes, obesity, or metabolic syndrome. She has mild executive dysfunction and mild extrapyramidal symptoms (EPS) but no tardive dyskinesia (TD). There is no evidence of delusions or hallucinations, although Ms. M is mildly paranoid about her neighbors. In the last year, she has been experiencing tremors and has fallen twice.

The number of older adults (age ≥ 65) who developed schizophrenia before age 45 is expected to double in the next 2 decades; the 1-year prevalence of schizophrenia among older adults is approximately 0.6%.^{1,2} This article reviews how positive, negative, and cognitive symptoms and social functioning change over decades and discusses strategies for reducing the impact of long-term antipsychotic use on neurologic and physical health. Although some patients experience schizophrenia onset later in life, in this article we focus on older adults who developed the illness before age 45.

Symptoms change with age

Positive symptoms of schizophrenia—hallucinations, delusions, and disorganized or catatonic behavior—do not “burn out” in most older



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Positive symptoms of schizophrenia do not 'burn out' in most older adults

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Table 1

Cognitive impairment: Schizophrenia vs Alzheimer's disease

Older patients with schizophrenia

- No decline or mild decline over decades
- Impairment in visuospatial tasks
- Perform worse on naming and praxis skills
- Histopathologically different from AD

Patients with AD

- Progressive decline over months or years
- More global deterioration
- Perform worse on delayed recall
- Senile plaques or neurofibrillary tangles

Common to both

- Degree of impairment is equal as reflected in MMSE scores
- Impaired recognition memory
- Risk factors for cognitive decline include low educational level and advanced age

AD: Alzheimer's disease; MMSE: Mini-Mental State Examination

adults.³ The severity of "day-to-day" psychotic symptoms appears reduced in patients with schizophrenia who have not had recent severe psychotic episodes. Aging-associated decrease in dopaminergic and other monoaminergic activities may explain this.

Some older adults experience sustained remission of positive symptoms and may no longer need antipsychotics.⁴ Factors that contribute to a better prognosis include:

- female sex
- developing the illness later in life (eg, fourth decade instead of second or third decade)
- being married
- obtaining appropriate treatment early in the illness.²

With treatment, positive symptoms can remit in 40% to 50% of older adults, especially those who have greater social support and fewer lifetime traumatic events.^{3,5}

Negative symptoms—flat affect, social withdrawal, and decreased motivation—may become worse in older adults with a history of poor functioning (especially institutionalized patients) as they age.^{2,6} Changes in negative symptoms are more closely correlated with symptom chronicity, functional and cognitive impairment, soft neurologic signs such as impaired fine motor coordination, and institutionalization than with the patient's age.⁷

Generalized cognitive deficits are ubiquitous in patients with schizophrenia and

substantially impact community functioning.^{1,8} Cognitive function may worsen in older schizophrenia patients with a history of poor functioning—especially institutionalized patients—as they age.⁹ Most older adults with schizophrenia who reside in the community have persistent, but generally not progressive, cognitive deficits. Low education levels, poor premorbid function, and more severe positive symptoms at baseline are associated with worse cognitive functioning at all ages.² Older adults with schizophrenia and TD have greater global cognitive deficits and greater deficits in learning than age-, education-, and subtype-matched schizophrenia patients without TD.¹

Differences and similarities in cognitive impairment in older adults with schizophrenia compared with those who have Alzheimer's disease (AD) are listed in **Table 1**. The course of cognitive deficits appears to be the most sensitive measure for determining whether a patient with long-standing schizophrenia has developed concomitant AD. Individuals with AD experience a more precipitous and progressive decline in cognitive function compared with patients with schizophrenia. Neuropsychological testing is recommended to accurately diagnose AD in older schizophrenia patients as early as possible.

Depressive symptoms

More than two-fifths of older adults with schizophrenia show signs of clinical de-

pression.¹⁰ Depression in this population is linked to positive symptoms, poor physical health, low income, and diminished network support. Routinely screen for depressive symptoms in older schizophrenia patients and institute prompt treatment as required. Assess these patients for suicide. Although suicide rates in schizophrenia patients decrease with age, they remain considerably higher than those of age-matched persons without schizophrenia.¹¹

Social functioning

Improvement or deterioration in social functioning is possible as patients with schizophrenia age.¹¹ Compared with age-matched patients in the general population and those with bipolar disorder, older adults with schizophrenia need more help with activities of daily living (eg, looking after the home, using public transportation).¹¹

Cognitive impairment seems to be the most important predictor of social functioning in patients with schizophrenia at any age. Impaired social functioning also is associated with negative symptoms and movement disorders. On community integration measures (how well the person lives, participates, and socializes in his or her community), older adults with schizophrenia do roughly half as well as their age-matched peers in the general community.³ Older schizophrenia patients' social networks seem to be smaller than those of their age-matched peers,¹ but they may experience fewer discordant interactions, such as situations with high expressed emotions. Increased psychological resilience may help older adults better adapt to changes as they age (**Box**).^{1,12}

A complex assessment

Older adults with schizophrenia have an increased prevalence of:

- obesity
- diabetes
- hyperlipidemia
- coronary artery disease
- myocardial infarction
- limited mobility
- illnesses related to smoking or substance abuse.^{13,14}

Box

Psychological resilience may improve with age

Psychological resilience factors—such as coping skills and self-efficacy—play an important role in an individual's ability to adapt to life stressors associated with schizophrenia and old age. One study found that a strategy of fighting back unwanted thoughts was negatively related to age, whereas acceptance and diversion were positively correlated with age, which suggests increased resilience in older adults with schizophrenia.¹² Coping skills seem to improve with aging and older patients may become more active participants in their recovery.¹ Routine clinical care of older adults with schizophrenia should focus on identifying and supporting factors that promote resilience in addition to the standard "problems-centered" approach that focuses on treating positive symptoms.

The severity of these conditions often is greater in older adults with schizophrenia compared with age-matched controls. Older adults with schizophrenia also have poorer access to and use of health care services and compliance with treatment regimens, and receive a lower quality of care. The incidence of physical health and neuropsychiatric problems increases with age and older adults with schizophrenia with poor functioning may be less able to recognize and report symptoms to health care providers.

Because these patients have complex health care concerns, we recommend using a checklist to help make routine visits thorough and identify and treat problems. Visit this article at CurrentPsychiatry.com for a downloadable assessment checklist. Ideally, the initial assessment should use an interdisciplinary approach that includes the patient, family/knowledgeable informants, psychiatrist, psychiatric nurse practitioner/physician assistant, social worker, caseworker, chaplain (if appropriate), and a nurse. The initial assessment may take 2 to 3 visits to complete.

Adapting treatment

Older adults with schizophrenia can benefit from the psychopharmacologic and psychosocial interventions used for

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Because coping skills may improve with age, identify and support factors that promote older adults' psychological resilience

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assessment checklist



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Second-generation antipsychotics are preferred for treating positive symptoms in older adults because SGAs have a lower risk of EPS and TD

Table 2

Interventions for older adults with schizophrenia

Symptom/problem	Intervention(s)
Positive symptoms	Second-generation antipsychotics, CBT, caregiver education
Negative symptoms	Second-generation antipsychotics, caregiver education, token economy
Cognitive symptoms	Reducing anticholinergic load, cognitive remediation
Social deficits	Social skills training, FAST
Depression	Antidepressants, CBT
Mobility limitations	Gait and balance strengthening exercises, physical therapy
Vascular risk factors	Second-generation antipsychotic with lowest risk of weight gain and hyperlipidemia, such as aripiprazole or ziprasidone
Cigarette smoking	Smoking cessation program
Severe tardive dyskinesia	Consider clozapine
Extrapyramidal symptoms	Second-generation antipsychotics with lowest risk of extrapyramidal symptoms, such as quetiapine or clozapine
Homelessness	Supported housing
Progressive cognitive decline	Dementia workup
Treatment nonadherence	Caregiver education, FAST, ACT
Caregiver stress	Caregiver education, support groups, psychotherapy

ACT: assertive community treatment; CBT: cognitive-behavioral therapy; FAST: functional adaptation skills training
 Source: References 15,16

younger patients (Table 2).^{15,16} However, you may need to adapt these treatments to accommodate cognitive impairment, medical comorbidities, or hearing and vision deficits. The most appropriate goal may not be recovery or rehabilitation, but making life more meaningful and satisfying for the patient and his or her family.

Pharmacotherapy. The 2009 schizophrenia Patient Outcomes Research Team (PORT) psychopharmacology treatment recommendations may be used for older adults.¹⁵ Most adverse effects of antipsychotics (except for dystonia) are more prevalent in older adults than in their younger counterparts. In general, second-generation antipsychotics (SGAs) are preferred over first-generation antipsychotics (FGAs) for treating positive symptoms in older patients because of SGAs' lower risk of TD and EPS despite the increased risk of metabolic disorders.

Aripiprazole and ziprasidone are associated with significantly less risk of metabolic disorders and may be preferred in older adults who have diabetes, obesity, or

hyperlipidemia. Aripiprazole has the lowest risk of QTc prolongation and may be preferred in patients who have prolonged QTc interval.¹⁵ Quetiapine and clozapine are associated with the lowest risk of EPS. Among SGAs, aripiprazole is associated with the lowest risk of prolactin elevation and sexual side effects and may be preferred in older adults who complain of sexual dysfunction or have osteoporosis.

Because rates of EPS and TDs may exceed 50% among older patients, many experts encourage clinicians to taper antipsychotic dosages in patients with stable chronic symptoms. Tapering dosages may be critically important because EPS may affect functional performance more than positive or negative symptoms or duration of psychoses.

The severity of TD in older adults with schizophrenia may be masked because many patients receive high doses of FGAs. When a patient's FGA dosage is reduced to manage EPS, subclinical TD may manifest for the first time, and existing TD may become noticeably worse. Consider clozapine for long-term management of older

adults who have TD; however, burdens of its use—such as weekly blood draws and anticholinergic adverse effects—may limit its use in older adults.

Lowering the anticholinergic load by reducing the dosage of drugs with anticholinergic activity or discontinuing anticholinergic medications when possible is a key component of treating older adults with schizophrenia. Doing so may improve not only patients' cognitive function but also their quality of life by reducing other anticholinergic adverse effects, such as constipation, blurred vision, and urinary retention.

Psychosocial interventions. The 2009 schizophrenia PORT psychosocial treatment recommendations and summary statements may be followed for older adults. Recommended interventions include:

- assertive community treatment
- supported employment
- cognitive-behavioral therapy (CBT)
- family-based services
- token economy
- skills training.¹⁶

Social skills training with or without CBT can be successfully adapted for older adults. Such interventions can improve social functioning and everyday living skills. Environmental modifications—such as removing decorative mirrors from the home of a delusional patient who believes people are living in the walls—may alleviate distress.

In addition, social contact and structured activities such as group exercises may benefit older patients. Educate caregivers about ways they can work with older adults, such as distracting them or not directly challenging false beliefs. Comprehensive psychosocial interventions also can improve health care management skills.

Preliminary data indicate that CBT and skills training with role-plays, structured feedback, and homework assignments can improve quality of life of older adults with schizophrenia.^{17,18} Functional Adaptation Skills Training focuses on medication management, social skills, communication

skills, organization, planning, and financial management.¹⁹ Those who received this training showed improvement in their functional skills that persisted for at least 3 months after treatment ended.²⁰

Poor adherence to medication is common in older schizophrenia patients and has devastating consequences. Adherence problems are complex and often have multiple causes, which requires customized interventions that target specific causes. Patients who receive a combination of psychosocial treatment and antipsychotics are more likely to be compliant with their medication and less likely to relapse or be hospitalized.¹⁶

Addressing the social stigma associated with schizophrenia may help reduce the social isolation and loneliness that many older adults experience. Psychiatrists can help fight stigma by participating in community educational programs and encouraging patients' families to become involved in support and advocacy organizations.

CASE CONTINUED

Medication changes

Ms. M's psychiatrist tells her that her problems with tremors and falls are most likely caused by haloperidol and recommends a slow dosage reduction and discontinuing diphenhydramine. Haloperidol is decreased to 10 mg/d for 1 month and then to 5 mg/d. Diphenhydramine is decreased to 25 mg at bedtime for 7 days and then stopped.

Ms. M declines physical therapy but agrees to participate in strength and balance training offered at the supported housing community 3 times a week for 4 weeks. Tremors resolve over the next month and Ms. M has not fallen since.

Ms. M complains of insomnia and is reluctant to further decrease haloperidol unless she is prescribed a different antipsychotic and given something to help her sleep. Ms. M is started on quetiapine, 25 mg/d at bedtime. Over 3 weeks, the dosage is increased to 100 mg/d. Ms. M tolerates quetiapine well and her sleep improves. Haloperidol is then decreased to 2.5 mg/d for 1 month and then discontinued. Ms. M also is offered supportive psychotherapy every 2 weeks to address her

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Lowering the anticholinergic load is a key component of treating older schizophrenia patients



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Social skills training such as FAST can provide lasting functional improvement in older adults with schizophrenia

Related Resources

- Cohen CI, ed. Schizophrenia into later life: treatment, research, and policy. Arlington, VA: American Psychiatric Publishing, Inc; 2003.
- Mental health: a report of the Surgeon General. Chapter 5: other mental disorders in older adults; schizophrenia in late life. www.surgeongeneral.gov/library/mentalhealth/chapter5/sec5.html.

Drug Brand Names

Aripiprazole • Abilify	Haloperidol • Haldol
Clozapine • Clozaril	Quetiapine • Seroquel
Diphenhydramine • Somnex,	Ziprasidone • Geodon
Unisom, others	

Disclosure

The authors report no financial relationship with any company whose products are mentioned in this article, or with manufacturers of competing products.

paranoia and stress. She continues to do well on quetiapine and supportive psychotherapy.

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Bottom Line

Positive, negative, and cognitive symptoms and social functioning change over decades in older adults with schizophrenia. The psychopharmacologic and psychosocial interventions used for younger patients may need to be adapted for older adults to accommodate cognitive impairment, medical comorbidities, and hearing and vision deficits.

Older patients with schizophrenia: An assessment checklist

History*

- | | |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Positive symptoms <input type="checkbox"/> Negative symptoms <input type="checkbox"/> Cognitive symptoms <input type="checkbox"/> Depressive symptoms <input type="checkbox"/> Smoking (inquire during initial assessment and then as necessary) <input type="checkbox"/> Alcohol and drug use (inquire during initial assessment and then as necessary) <input type="checkbox"/> Social integration <input type="checkbox"/> Instrumental and basic activities of daily living <input type="checkbox"/> Problems with living situation (inquire during initial assessment and then as necessary) | <ul style="list-style-type: none"> <input type="checkbox"/> Involuntary movements <input type="checkbox"/> Falls <input type="checkbox"/> Vascular risk factors: hypertension, diabetes, hyperlipidemia, weight gain (inquire during initial assessment and periodically thereafter) <input type="checkbox"/> Hearing problems (inquire during initial visit and then as necessary) <input type="checkbox"/> Vision problems (inquire during initial visit and then as necessary) <input type="checkbox"/> Compliance with medications <input type="checkbox"/> Level of physical activity/regular exercise <input type="checkbox"/> Healthy nutritional habits |
|--|---|

Examination*

- | | |
|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Blood pressure <input type="checkbox"/> Weight/body mass index <input type="checkbox"/> Hearing (inquire during initial assessment and then as necessary) <input type="checkbox"/> Vision (inquire during initial assessment and then as necessary) <input type="checkbox"/> Involuntary movements: <ul style="list-style-type: none"> • Assess for EPS • Assess for TD (AIMS test is recommended during initial assessment and periodically thereafter) <input type="checkbox"/> Muscle tone <input type="checkbox"/> Gait/balance test <input type="checkbox"/> Speed of walking | <ul style="list-style-type: none"> <input type="checkbox"/> Speed of thinking <input type="checkbox"/> Speech <input type="checkbox"/> Depressed mood <input type="checkbox"/> Suicidal thoughts (inquire during initial assessment and then as necessary) <input type="checkbox"/> Delusions <input type="checkbox"/> Hallucinations <input type="checkbox"/> Standardized tests: <ul style="list-style-type: none"> • Cognitive functioning (inquire during initial assessment and then every 6 to 12 months using office-based standardized tests such as MMSE or MOCA) • Depression (inquire during each visit using PHQ-9 or GDS-15) |
|---|---|

Laboratory tests

- | | |
|---|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> Fasting blood sugar/hemoglobin A1c (baseline and annually thereafter, more frequently if necessary) <input type="checkbox"/> Lipid profile (baseline and annually thereafter, more frequently if necessary) | <ul style="list-style-type: none"> <input type="checkbox"/> Electrocardiogram (baseline to measure corrected QT interval) <input type="checkbox"/> Urine drug screen (as necessary) |
|---|---|

Neuroimaging

- MRI of the brain if dementia and/or stroke is suspected based on history of cognitive decline and/or decline in office-based cognitive test scores. CT scan of the head is a reasonable alternative if MRI cannot be performed

Specialty referrals

- Neuropsychologist: for neuropsychological testing if dementia is suspected
- Neurologist: recommended if patient develops new-onset seizures, focal neurologic deficits, and/or EPS on low-potency antipsychotics
- Cardiologist: recommended for patients with prolonged corrected QT interval

*Assess all items at each visit unless otherwise noted

AIMS: Abnormal Involuntary Movement Test; EPS: extrapyramidal symptoms; GDS-15: Geriatric Depression Scale 15-item version; MMSE: Mini-Mental State Examination; MOCA: Montreal Cognitive Assessment; PHQ-9: Patient Health Questionnaire 9; TD: tardive dyskinesia