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insights & Implications IN GERONTOLOGY

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Alzheimer's-Related Psychosis: Interdisciplinary Perspectives for Understanding and Responding to Delusions and Hallucinations

Overview of Alzheimer's-Related Psychosis

Neuropsychiatric symptoms (NPS) such as psychosis are common in people living with dementia and often cause significant distress. Alzheimer's disease (AD) accounts for 60%-80% of dementia cases, affecting more than 7 million people in the United States.[1] AD is associated with several changes in the brain, including the accumulation of beta-amyloid plaques outside neurons and abnormal hyperphosphorylated tau tangles inside neurons.[1]

AD is a progressive disease. Early stages are characterized by memory loss, including difficulties recalling recent conversations, names, and events. As AD advances, communication problems, confusion, poor judgment, emotional dysregulation, and behavioral changes may occur. In late-stage AD, motor symptoms such as difficulty walking, speaking, and swallowing are common.[1] In addition to these symptoms, most people develop NPS (historically referred to as behavioral and psychological symptoms of dementia [BPSD]) at some point during the progression of AD. NPS include apathy, depression, agitation, and psychosis (e.g., delusions and hallucinations).[1–3] The type and severity of NPS in an individual person can fluctuate over time.[3]

The prevalence of psychosis in people living with AD varies across studies; some report that more than half of people living with AD experience psychosis at some point during the disease process while others report lower estimates.[2,3] The incidence and nature of psychosis in AD differs from that in other forms of dementia, and psychosis is more common in Lewy body dementia and Parkinson's disease dementia. In addition, co-pathologies are common in people living with AD and Lewy body and cerebrovascular pathologies, in particular, may increase risk for developing psychosis.[4,5]

Psychotic symptoms can occur at any time during the development and progression of AD, including during

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mild cognitive impairment (MCI).[2,6] People with MCI who develop psychosis are more likely to progress to dementia than those without psychosis.[3] When present, psychotic symptoms persist for at least a year in the majority of people; the symptoms may be intermittent or continuous.[2]

Psychotic symptoms in AD are associated with poorer outcomes, including more rapid cognitive decline, greater distress for patients and their caregivers, poorer general health, more rapid progression of functional impairment, earlier institutionalization, increased hospital admissions, and increased mortality.[2,7] Untreated Alzheimer's-related psychosis (ARP) may lead to poorer outcomes for people living with AD, including physical injury to themselves or others, disruptions of relationships with family and other caregivers, and loss of housing due to unmanageable behaviors.[8]

Recognizing Alzheimer's-Related Psychosis

Symptoms of psychosis include delusions and hallucinations. Delusions have been defined as "fixed beliefs that are not amenable to change in light of conflicting evidence."[9] Common delusions include beliefs about theft, persecution, infidelity, abandonment, or that deceased relatives are living. Misidentification delusions can include beliefs that one's home is not one's home or that a family member is an imposter. Hallucinations occur when the person experiences sensory input that does not align with what is experienced by others, such as seeing a person in the room when nobody is there or hearing sounds (e.g., music) that no one else hears. Hallucinations are most likely to be visual but can occur in any sensory modality. Depending on the nature of the delusions or hallucinations, they can result in substantial distress for the person with AD.

Theoretically, delusions may represent a person's attempts to make sense of the world as cognition declines. Symptoms of psychosis also may result from neurological damage localizing in the right frontal cortex, anterior cingulate cortex, and temporal-occipital regions.[6,10] However, it can be difficult to localize specific psychotic symptoms as other brain regions have also been associated with delusions and hallucinations, perhaps influenced by co-pathologies.[11] Potential diagnostic biomarkers that are under investigation for ARP include phosphorylated tau181 (p-tau181) and neurofilament light (NfL).[12,13]

The diagnosis of ARP can be difficult due to potential similarities between some delusions and certain symptoms of cognitive impairment such as memory distortion and confabulation (when people make up stories to fill gaps in memory).[14] Diagnostic criteria for psychosis in major or mild neurocognitive disorders (e.g., AD) require that psychotic symptoms are not related to delirium or functional psychosis and were not present before the onset of AD (e.g., not due to another psychiatric illness) (Table 1).[15]

The assessment for ARP typically requires multiple approaches, including interviewing the person living with dementia and/or caregivers, observing the person living with dementia, and reviewing medical records.[8] Capturing baseline information about symptoms with quantitative assessments is helpful for tracking responses to treatment.[8] Validated and widely used tools for the assessment of psychosis in AD include the following:[14]

- Neuropsychiatric Inventory (NPI) and the Neuropsychiatric Inventory-Questionnaire (NPI-Q)
- Behavioral Pathology in AD Rating Scale (BEHAVE-AD)
- Scale for the Assessment of Positive Symptoms–Hallucinations + Delusions (SAPS–H+D)
- Dementia-related Psychosis 3 (DRP3) screen

Psychotic symptoms are often comorbid with other NPS such as agitation, aggression, and depression. People who experience ARP are more likely to become aggressive than those who have AD without psychosis.[3]

Risk Factors for ARP

Available evidence indicates that both genetic and environmental factors can increase the risk for ARP.[2] Although ARP appears to be partially heritable, no specific genetic variants associated with increased risk have been identified to date. Environmental factors associated with the development of ARP include stress due to changes in routine as well as physical and environmental challenges that exceed the person's functional capacity. Caregiver factors such as negative communication styles (e.g., yelling) can trigger or exacerbate psychosis. Acute medical conditions and pre existing psychiatric illnesses as well as unmet needs (e.g., poor sleep, hunger, pain, boredom) can also exacerbate psychosis.[2]

Untreated Alzheimer's-related psychosis (ARP) may lead to poorer outcomes for people living with Alzheimer's disease.

Table 1. Diagnostic Criteria for Psychosis in Major or Mild Neurocognitive Disorders

A. Characteristic symptoms	Presence of one (or more) of the following symptoms: 1. Visual or auditory hallucinations (e.g., seeing silent individuals standing in the room, seeing children in the yard, or seeing animals in the house). 2. Delusions (fixed false beliefs that the patient believes to be true, e.g., that the spouse is unfaithful, that possessions are being stolen, or that one is not who one claims to be).
B. Primary diagnosis	All the criteria for any major and mild neurocognitive disorder are met, with the etiologic diagnoses specified (e.g., major neurocognitive disorder [Alzheimer's disease]). Specific diagnoses include Alzheimer's disease, dementia with Lewy bodies, vascular dementia, Parkinson's disease dementia, frontotemporal dementia, progressive supranuclear palsy, mild cognitive impairment, traumatic brain injury, and corticobasal degeneration. Other rarer causes of major and mild neurocognitive disorder are also appropriate when diagnosed as a cause of psychosis.
C. Chronology of the onset of symptoms of psychosis vs. onset of symptoms of cognitive impairment	There is evidence from the history that the symptoms in Criterion A have not been present continuously since prior to the onset of the symptoms of dementia.
D. Duration	The symptom(s) in Criterion A have been present, at least intermittently, for 1 month or longer.
E. Severity	Symptoms are severe enough to cause some disruption in patient's and/or others' functioning or pose a threat to the safety of self or others. • "Disruption" is defined as interfering with the patient's or others' ability to accomplish activities of daily living or interact as usual socially. • "Patient's functioning" is defined as being able to interact with family members and others, not being preoccupied with hallucinations, etc. • "Others' functioning" is defined as interfering with the ability of others to care for or interact with the patient or causing distress to the patient.
F. Exclusionary criteria	A diagnosis of psychosis in major or mild neurocognitive disorder should be excluded in the following patients: 1. Patients who have met the criteria for schizophrenia, schizoaffective disorder, delusional disorder, mood disorder with psychotic features, or depression with psychotic features. 2. When the psychosis occurs exclusively during the course of a delirium. 3. When the psychosis is solely attributable to another general medical condition (e.g., hypothyroidism) or direct physiological effects of a substance (e.g., a drug of abuse, a medication). 4. When the symptoms are culturally appropriate (e.g., ancestor hallucinations in some cultures). 5. When the hallucinations are more readily attributable to conditions known to cause hallucinations such as epilepsy, migraine, disease of the sensory organs, or stroke.
G. Associated features (specify if associated)	• With Agitation: when there is evidence, from history or examination, of prominent agitation with or without physical or verbal aggression. • With Depression: when prominent depressive symptoms, such as depressed mood, insomnia or hypersomnia, feelings of worthlessness or excessive or inappropriate guilt, or recurrent thoughts of death are present (note that Mood Disorder with Psychotic Features is an exclusion for the diagnosis of psychosis with major or mild neurocognitive disorders [see F.1 above]).

Adapted from Cummings J, Pinto LC, Cruz M, et al. Criteria for psychosis in major and mild neurocognitive disorders: International Psychogeriatric Association (IPA) Consensus Clinical and Research Definition. *Am J Geriatr Psychiatry.* 2020;28(12):1256-1269. doi: 10.1016/j.jagp.2020.09.002.

Approach to Managing ARP

The management of ARP includes nonpharmacologic approaches and, when necessary, pharmacotherapy. Educating the person with AD and their caregivers about treatment options helps support shared decision-making and effective care planning to help facilitate comprehensive care.

The DICE method (Describe, Investigate, Create, and Evaluate) is a recommended approach for managing NPS (Table 2).[16] The steps are:[3]

- Describe the behavior in detail
- Investigate potential triggers (e.g., medical issues, adverse effects of medications, environmental factors)
- Create a plan to prevent and respond to the behavior
- Evaluate and modify the management approach as needed

The assessment should also consider whether sensory impairments are present, as visual or auditory impairments can contribute to the presence of delusions or hallucinations.[17] For example, Charles Bonnet syndrome, also referred to as visual release hallucinations, occurs when people with low vision experience visual hallucinations.[18]

Importantly, any underlying conditions that are identified (e.g., delirium due to an infection, poorly managed pain) should be addressed.[8,16] The patient's medication regimen should be reviewed for medications that may be triggering psychosis or delirium.[19] If an underlying cause is identified, it should be treated and the symptoms of psychosis should be closely monitored.[20]

In addition to following the DICE approach to behavioral symptom management, it is important to evaluate whether symptoms of psychosis are distressing. For example, an auditory hallucination such as hearing music may not be bothersome and does not necessarily require intervention. Approximately half of delusions are associated with distress or behavioral disturbances.[17]

Nonpharmacologic Approaches

Although a wide range of nonpharmacologic modalities have been investigated for managing NPS, there is little evidence that specifically supports the use of these approaches for preventing psychosis.[3] No nonpharmacologic treatments were found to be effective at reducing delusions or hallucinations in ARP in a systematic review and meta-analysis.[21] Treatments that have been shown to reduce delusions (but not hallucinations) in individual studies include interactions with robotic pets, music therapy, cognitive rehabilitation/stimulation, and person-centered care.[21]



Nonpharmacologic modalities that have been found to be ineffective for ARP include transcranial direct stimulation, lavender aromatherapy, light therapy, staff education, life story book creation, mindfulness training, and exercise sessions.[21] Despite these findings, mindfulness training and patient-centered care improved quality of life for persons living with AD.[21]

Behavior Management Approaches for ARP

Behavioral management approaches for ARP include basic principles of care, symptom-specific approaches, and modifying the environment. Basic principles of care for NPS include the following:[22]

- Consider and address sensory impairments (e.g., vision, hearing)
- Support the autonomy of the person with ARP and adjust expectations over time
- Avoid confrontation; if the person with ARP becomes upset, remain calm, firm, and supportive
- Maintain a consistent, structured environment with an appropriate stimulation level
- Provide frequent reminders, explanations, and orientation cues

Table 2. The DICE Approach to Behavioral Symptom Management

Step 1. Describe

- Elicit a thorough description of the symptoms and the context in which they occur through discussion with the caregiver and the person living with dementia (if possible).
  - The description should include consideration of possible antecedents or triggers of the behavior.
- Identify which aspects of the symptoms are most distressing or problematic to the person living with dementia and the caregiver.
- Determine treatment goals.

Step 2. Investigate

- Identify possible underlying and modifiable causes, including possible undiagnosed medical conditions, such as psychiatric comorbidities.
- Assess the current medication profile.
- Assess the caregiver relationship with the person living with dementia, including communication styles, expectations, overestimation and underestimation of the person's abilities, and the caregiver's own stress and depression that may inadvertently exacerbate behaviors.
- Evaluate the environment for potential triggers, including whether the environment is overstimulating or understimulating, difficult for the person living with dementia to navigate, or lacks predictable routines and pleasurable activities.

Step 3. Create

- Create and implement a treatment plan in collaboration with the multidisciplinary care team, caregiver, and person living with dementia (if possible).
- Address any medical or environmental issues identified in the "investigate" step (e.g., antibiotics for a urinary tract infection, fluids for dehydration, discontinuing medications that may have behavioral side effects, modifications of the environment, improving sleep hygiene).
- Brainstorm behavioral and environmental approaches with the caregiver, person living with dementia (when possible), and other team members (e.g., visiting nurse, social worker, occupational therapist).
- Consider medications if behavioral and environmental approaches are not effective.
- Medications may be attempted initially if certain conditions are present, such as:
  - Major depression with or without suicidal ideation.
  - Psychosis causing harm or with great potential for harm.
  - Aggression causing risk to self or others.

Step 4. Evaluate

- Assess whether recommended strategies were implemented, whether they were effective, and whether there were intolerable side effects or impacts.
- Because behaviors change and fluctuate over the course of dementia, ongoing monitoring is essential, and removal of interventions (especially medications) should be considered periodically.
- If psychotropic drugs were prescribed, consider a trial of dose reduction or discontinuation.

Adapted from Kales HC, Gitlin LN, Lyketsos CG; Detroit Expert Panel on Assessment and Management of Neuropsychiatric Symptoms of Dementia. Management of neuropsychiatric symptoms of dementia in clinical settings: recommendations from a multidisciplinary expert panel. *J Am Geriatr Soc.* 2014;62(4):762-769. doi: 10.1111/jgs.12730

- Employ guidance, demonstration, and reinforcement
- Reduce the complexity of choices, simplify requests, and avoid tasks that cause frustration
- Consult a health care professional to address sudden declines in function or emergence of new symptoms

Strategies for Responding to Hallucinations

When caring for a person with AD who is experiencing hallucinations, the first step is to assess the effect of the hallucination on the person and others in the environment. Is the hallucination upsetting? Is it prompting the person to behave in a manner that is unsafe?[23] If the hallucination is not upsetting or causing unsafe behaviors, there may not be a need to intervene. However, if the hallucination is upsetting, caregivers should react calmly, offer reassurance, use distractions, and modify the environment (Table 3).[23]

Strategies for Responding to Delusions

A person experiencing a delusion is experiencing a view of reality that is true to them, and it is often impossible to convince that person that their delusion is not true. Caregivers should be educated to avoid confronting or denying the person's reality because arguing with the person is likely to increase the level of distress and unlikely to change their beliefs.[24]

Importantly, delusions often include accusations of wrongdoing by caregivers, and being accused by someone experiencing delusions can be distressing for caregivers. Caregivers should be educated that accusations are common symptoms of AD and taught not to take accusations personally and to use strategies for de-escalating the situation.

When caring for someone who is having a delusion, caregivers should seek to understand the meaning of the delusion, encourage the person to talk through their thoughts, and validate how they are feeling rather than dismissing concerns. For example, consider that someone might accuse others of stealing something if they cannot find it. The caregiver should ensure that important items are easy to locate, make a specific place for storing those items, and take care to put those items in their

Table 3. Coping Strategies for Responding to Hallucinations

Strategy	Examples
Offer reassurance	• Use supportive phrases such as "Don't worry. I'm here. I'll protect you. I'll take care of you." • Gentle patting to divert the person's attention and reduce the hallucination. • Acknowledge the feelings behind the hallucination and try to find out what the hallucination means to the individual: "It sounds as if you're worried" or "I know this is frightening for you."
Use distractions	• Suggest a walk or move to another room. Frightening hallucinations often subside in well-lit areas where other people are present. • Try to turn the person's attention to music, conversation, or activities you enjoy together.
Respond honestly	• Be honest if the person asks about a hallucination or delusion. For example, if he or she asks, "Do you see him?" answer with, "I know you see something, but I don't see it." This approach avoids denying what the person sees or hears and helps avoid an argument.
Modify the environment	• Check for sounds that might be misinterpreted, such as noise from a television or an air conditioner. • Look for lighting that casts shadows, reflections, or distortions on the surfaces of floors, walls, and furniture. Turn on lights to reduce shadows. • Cover mirrors with a cloth or remove them if the person thinks that he or she is looking at a stranger.

Adapted from Alzheimer's Association. Hallucinations. Accessed October 15, 2025. https://www.alz.org/help-support/caregiving/stages-behaviors/hallucinations

places. It can be helpful to keep spares on hand for items like glasses so that they can be readily replaced if truly lost. De-escalation strategies can include offering to help locate items that the person thinks may be stolen and attempts to distract or redirect the person to another activity.[24] If the delusion is that someone stole the person's glasses, the caregiver can offer alternative explanations rather than directly contradicting the delusion: "Is it possible you left your glasses in the other room? Let's go look."

At the same time, it is important for providers and caregivers to consider the possibility of elder abuse and avoid automatically dismissing all statements regarding concerning events such as thefts or violence. Reports that could be true should be investigated, particularly if they are new occurrences.

Modifying the Environment

Maintaining a regular routine and structured environment may help reduce confusion for people living with AD. A daily schedule with consistent times for sleeping and meals and that includes enjoyable activities and physical activity (when possible) is beneficial.[25] Stimulating activities and socialization can help to reduce loneliness and isolation and may help reduce the risk of delusions.

Modifying the person's environment to avoid sensory overstimulation is recommended. However, the need to make living spaces dementia-friendly should be balanced with the benefits of avoiding unnecessary changes to the home.

Minimize use of the radio or television if these devices seem to trigger visual or auditory hallucinations. Reflections in mirrors, windows, and television screens may also be triggers. For example, a person living with dementia might see their reflection, not recognize themselves, and believe that a stranger is in the room with them. Similarly, they might think that a person on the television is in the room with them. Removing mirrors, covering the television, and using drapes may be helpful because these steps can help minimize perceptual distortions.[25] However, these steps are more likely to target misinterpretations rather than true hallucinations.

Dangerous objects such as guns should be secured where the person living with dementia cannot access them. Sharp objects such as kitchen knives should also



be stored safely. This step is especially important if the person with ARP mistakenly believes that caregivers or other visitors to the home are intruders.[25]

Approach to Pharmacotherapy for ARP

Pharmacologic options may be appropriate for psychotic symptoms associated with AD that cause distress or unsafe situations and cannot be adequately managed with nonpharmacologic approaches. Nonpharmacologic behavior management strategies should be continued after the initiation of medication.[20]

The American Psychiatric Association (APA) recommends that nonemergency antipsychotic medications should only be used to treat psychosis in people living with dementia if symptoms are severe, dangerous, and/or cause significant distress.[8] According to the APA:[8]

- The potential risks and benefits of treatment should be discussed with the person living with dementia (to the extent feasible) as well as caregivers, family members, and/or surrogate decision-makers before nonemergency antipsychotic medication is initiated.
- If antipsychotic medications are used, treatment should be initiated at a low dose and titrated up slowly to the lowest effective dose.



- The risks and benefits should be re-evaluated if clinically significant side effects occur.
- If there is no clinically significant response after 4 weeks, the antipsychotic medication should be tapered and discontinued.
- If the person living with dementia has a positive response, an attempt to taper should be made within 4 months of treatment initiation unless the person experienced a recurrence of symptoms with prior tapering attempts.
- If tapering off the medication, symptoms should be assessed at least monthly during the taper and for at least 4 months after medication discontinuation.
- Long-acting injectable antipsychotic medications should be avoided due to an increased duration of harm that could occur if people experience intolerable adverse effects.

Recommendations from the Substance Abuse and Mental Health Services Administration (SAMHSA) are similar and include the following principles for prescribing antipsychotic treatment for people living with dementia:[20]

- Antipsychotic medications should be avoided when possible.
- If indicated, the dosage should be started as low as possible with modest increases only when necessary.
- Second-generation antipsychotics are preferable over first-generation antipsychotics due to more favorable side effect profiles.
- Medications should be discontinued if no clinical benefit is observed.
- Discontinuation may need to be considered for those who experience side effects even if there is improvement in behavioral symptoms.
- Taper should be attempted for ALL patients within 4 months of treatment with close monitoring.

SAMHSA also states that the decision to use antipsychotic medication should include discussion of the care plan with the person or a legal representative. The person living with dementia should be included in the conversation and decision-making to the extent possible.[20] Care should be provided in a person-

centered multidisciplinary approach that addresses psychosocial aspects of care.[20]

Pharmacologic Options

No medications are currently approved by the Food and Drug Administration (FDA) for the treatment of ARP. However, several medications have been used off-label to treat psychosis in people living with AD.

Antipsychotic medications are a common choice for pharmacologic treatment of ARP. The effect size of antipsychotic medications for treating ARP is small and mostly based on trials with risperidone.[8] However, some evidence suggests that these medications can minimize the risk of violence, reduce distress, improve quality of life, and reduce caregiver burden.[8] Other antipsychotic medications that are used off-label for ARP include aripiprazole, olanzapine, and quetiapine.[14]

These medications have moderate efficacy but are associated with important adverse events including an increased risk of death.[3] In 2008, the FDA added a black box warning that "the treatment of behavioral disorders in elderly patients with dementia with … antipsychotic medications is associated with increased mortality."[26] This risk is greatest during the first 120 days of antipsychotic use.[8]

Common side effects of antipsychotic medications include sedation, dizziness, postural hypotension, confusion, anticholinergic symptoms, strokes, and increased risk of falls.[14,20] Extrapyramidal side effects may occur in patients with dementia receiving antipsychotic medications; extrapyramidal and anticholinergic side effects may worsen cognitive symptoms.[6] Antipsychotics may also reduce the seizure threshold.[20]

Of note, pimavanserin, a highly selective 5-HT2A inverse agonist, is an atypical antipsychotic indicated for the treatment of hallucinations and delusions associated with Parkinson's disease.[27] Like other atypical antipsychotic medications, pimavanserin includes a boxed warning for increased mortality in elderly patients with dementia-related psychosis.

Pimavanserin has been studied for the treatment of neuropsychiatric symptoms in people with other neurodegenerative diseases, including AD.[28] However, the FDA rejected the application of pimavanserin to treat hallucinations and delusions associated with dementia-related psychosis in 2021.[29] The reasoning behind the rejection was that the positive results in clinical trials appeared to be driven by robustly positive results in the Parkinson's disease dementia subgroup and limitations in the interpretability of the results.[30]

Other medications may be prescribed off-label for treating ARP; however, there are few data to support their use.

Emerging Pharmacologic Options

The combination of xanomeline and trospium chloride was approved for the treatment of schizophrenia in 2024.[31] Unlike atypical antipsychotics, it does not have a box warning for an increased risk of mortality in elderly patients. It is currently under investigation for the treatment of psychosis associated with AD.[32,33] Planned completion dates for Phase 3 clinical trials of xanomeline/trospium chloride for ARP are listed for 2026.[23,33]

ACP-204 is an inverse agonist of the 5-HT 2A serotonin receptors that is being developed to treat ARP. Patients are currently being enrolled in Phase 2 and Phase 3 trials of this medication, with expected study completion dates in 2028.[34]

Documentation

Documentation of ARP symptoms is required for tracking the response to interventions, monitoring any progression or remission, and supporting the development of an ongoing plan of care. In addition to documenting occurrences of hallucinations and delusions, clinicians should document what interventions are attempted and responses to those interventions to support the ongoing assessment of the plan of care. Appropriate documentation of ARP can facilitate better care planning and improved care coordination.[22] Proper documentation facilitates communication among providers and continuous follow-up care.

Working Collaboratively with People Living with Dementia and Their Caregivers

The values and choices of people living with AD should be elicited and respected to the degree possible. Candid conversations about potential symptoms and management strategies should ideally take place early in the disease course to allow for people living with AD to engage with decision-making to a greater extent.[35,36]

The values and choices of people living with AD should be elicited and respected to the degree possible.

Shared Decision-Making

Shared decision-making (SDM) in the care of people living with dementia is based on a person-centered care delivery model and requires a deliberate effort to identify and discuss patient and caregiver preferences.[37] SDM is defined by the Agency for Healthcare Research and Quality (AHRQ) as "a model of patient-centered care that enables and encourages people to play a role in the medical decisions that affect their health."[35] SDM can increase patient satisfaction and lead to better health outcomes.

In SDM, patients and their caregivers are educated about the condition as well as treatment options and their risks and benefits.[35] AHRQ's SHARE approach for SDM involves the following steps:[35]

- **S**eek the person's perspective.
- **H**elp the person explore and compare treatment options.
- **A**ssess the person's values and preferences.
- **R**each a decision with the person.
- **E**valuate the person's decision.

SDM can be used to address a variety of topics that arise in the care of people living with dementia, including long-term planning, living arrangements, medication use, and the selection of behavior management strategies.[37]

Clinicians should educate caregivers and people living with dementia (to the extent possible) about anticipated disease progression and care plan options so that they can be informed partners in guiding care. Of note, a person's capacity to participate in SDM is expected to decline as dementia progresses and should be supported to the extent possible. For example, in later stages of dementia, individuals may be capable of providing yes/no answers to simple questions about their care.

Developing a Care Plan

Effective care plans can support people living with dementia and their caregivers in a variety of settings. The APA recommends that people living with dementia have a documented comprehensive treatment plan that includes appropriate person-centered nonpharmacological and pharmacological interventions, as indicated.[8]

People living with dementia who have comprehensive care plans are less likely to escalate to behaviors that require emergency department visits and hospitalizations, and there is reduced risk for the declines in patient function and outcomes that are associated with psychosis.[22] For community-based people living with dementia, care plans that effectively address psychosis may help delay institutionalization because psychosis is associated with several factors (e.g., combative behaviors, challenges with daily living) that may lead families and care providers to transfer people living with dementia to a long-term care setting.[22]

Care planning conversations should address the progressive nature of dementia, the likelihood of developing NPS such as psychosis, and the potential role, benefits, and risks of pharmacological treatment options. Discussions should begin early to help facilitate meaningful care decisions and develop guidance for decision-making as dementia progresses.[38]

Education About Psychosis

Education about the likelihood of NPS, including psychosis, should be provided by health care providers to people living with dementia and their families and caregivers. Awareness that these symptoms can be expected as dementia progresses can help caregivers understand the behaviors if they emerge and become better prepared by being trained in management strategies before a crisis situation occurs.

Educating caregivers that the person living with dementia may stop responding to logic and that their responses to various situations may shift can help those caregivers prepare for the future, while detailed information about a range of potential challenges and management strategies can be shared with caregivers at a later time as those situations emerge. As the disease progresses, prompting questions can explore whether people are experiencing NPS. If people living with dementia or their caregivers indicate the presence of NPS, an assessment is warranted, as discussed earlier. For psychotic symptoms, it is important to evaluate whether delusions and hallucinations are causing distress or safety concerns and manage the symptoms accordingly.



Summary

ARP is a common manifestation of AD that arises from neurodegeneration and is associated with poorer outcomes, including more rapid decline, increased caregiver burden, and increased likelihood of institutionalization. The emergence of delusions and hallucinations in a person with AD calls for a comprehensive assessment involving patient and caregiver interviews, observation, and validated tools, as well as review to rule out conditions such as delirium, psychiatric illness, sensory impairment, or medication side effects. The DICE approach can be used to identify triggers, address unmet needs, and develop individualized plans. Documentation of symptoms, triggers, interventions, and responses is essential for ongoing care coordination.

While evidence for nonpharmacologic treatments specifically targeting psychosis is limited, techniques such as structured routines, environmental modification, person-centered care, and caregiver education can reduce distress and improve safety. Strategies for managing psychotic symptoms as they occur include reassurance, redirection, avoiding confrontation, and maintaining supportive environments.

Although no medications are currently FDA-approved for ARP, off-label use of pharmacotherapy may be considered when behavioral strategies are insufficient. If pharmacotherapy is attempted, treatment should start with the lowest effective dose and include frequent re-assessment and attempts to taper if possible.

Effective care requires strong communication and SDM with people living with dementia and their caregivers. Early conversations are helpful for ensuring that personal values are incorporated in treatment planning. Comprehensive, person-centered care plans that encompass nonpharmacologic, behavioral, and pharmacologic interventions aligned with the person's wishes can improve quality of life, reduce crises, and delay institutionalization.

Interdisciplinary Insights: A look at Identifying ARP and Selecting Treatment Interventions

An Interview with Cliff Singer, MD

Identifying ARP and Determining When to Intervene

Determining whether a person is experiencing ARP can be difficult because psychotic symptoms are interrelated with agitation and cognitive impairment, and the conditions can be manifestations of each other, explains Dr. Singer. Psychotic symptoms, particularly delusions, are often deeply intertwined with agitation because they can cause distress, he notes. Further, delusions frequently arise from misinterpretation or misidentification, "If your brain isn't interpreting your environment correctly, it can certainly give rise to interpreting that environment in ways that are distressing to you."

For example, facial agnosia may cause a person to believe a family member is an imposter, while memory deficits may lead someone to conclude misplaced items were stolen. These experiences can rapidly escalate into agitation or aggression.



Similarly, differentiating between confusion, misperception, and true delusions is a clinical challenge. Dr. Singer emphasizes the importance of determining both persistence and distress when evaluating behaviors. While misidentification and misinterpretation are common in dementia, when these become persistent, distressing, and fixed, they cross into delusional territory. Dr. Singer underscores that a delusion that does not distress the patient may not require intervention. However, distress-driven behaviors often demand active management, especially when safety is at risk.

Finally, and importantly, identifying and correcting medical contributors can significantly reduce psychotic or agitated behaviors.

Behavioral Management Strategies

Dr. Singer highlights several behavioral approaches that are effective for addressing delusions. He notes that delusions that cause anxiety may respond well to repeated, gentle reassurance. On the other hand, contradicting the person having a delusion often worsens distress. "Reality orientation becomes futile and counterproductive," he observes.

When a delusion is firmly held, validating the emotion (rather than challenging the content) and then redirecting the person may be most effective, he explains. For example, if a person thinks that their father is waiting for them, the caregiver could say something such as, "Your father called; he's running late. Let's have tea." Dr. Singer acknowledges that some people conceptually struggle with making untrue statements but observes that "sometimes strategic reframing is best for managing the situation." Activities, conversation, or movement can also help divert attention from distressing symptoms.

Recommendations for When to Consider Pharmacologic Treatment

Dr. Singer emphasizes that decisions about whether to initiate pharmacotherapy hinge on the persistence

of psychotic symptoms, their severity, and the presence of distress. "If it's been going on for weeks, is frequent, and distress is high, we consider medication," he explains.

He uses treatment algorithms that commonly combine low-dose atypical antipsychotics such as risperidone or olanzapine along with selective serotonin reuptake inhibitors (SSRIs; e.g., sertraline), and trazodone. He notes that while antipsychotics are considered high-risk, "they are effective when used for the right reason, and at the right dose and time. We don't use them for general behavioral symptoms like wandering. We use them to reduce delusions, hallucinations, and distress."

SSRIs are typically used to address the anxiety and distress that result from the delusion, but do not address the delusion itself. Cholinesterase inhibitors may be used to improve cognitive clarity and sometimes reduce hallucinations. Medications are selected based on symptom profile, sleep issues, and risk factors, explains Dr. Singer.

Clinical Trial Challenges

Dr. Singer highlights limitations in trial data that complicate the development of evidence-based guidelines for managing ARP:

- Placebo responses are high, in part because psychotic symptoms tend to wax and wane in dementia.
- Cohorts are heterogeneous and often misdiagnosed, particularly in older research that was conducted before current diagnostic strategies were available to identify the type of dementia.
- Reliably measuring psychosis is difficult.

For these reasons, he emphasizes that real-world clinical judgment remains critical when selecting pharmacologic interventions for people experiencing ARP.



Diagnostic Considerations Across Dementia Types

Co-pathology is extremely common in older adults, observes Dr. Singer, and can influence treatment response and medication tolerance. For example, he reports that up to 40% of individuals with AD may also have Lewy body pathology. He also notes that people with Lewy body disease or Parkinson's disease dementia often have severe sensitivity to antipsychotics. Dr. Singer stresses that each patient's experience is unique, and that treatment needs to be individualized.

Cliff Singer, MD, is a geriatric psychiatrist with 40 years of clinical experience working with people living with dementia. His expertise spans long-term care, hospital, and outpatient settings, as well as clinical trials focused on psychosis in AD and other dementias.

Interdisciplinary Insights: Considering Cultural and Caregiver Perspectives for Managing ARP

An Interview with Kalisha Bonds Johnson, PhD, RN, PMHNP-BC

Talking with Caregivers About Recognizing Psychotic Symptoms

Dr. Bonds Johnson underscores that psychosis in dementia presents very differently from how it appears in primary psychotic disorders. In dementia, delusions and hallucinations are often tied to cognitive deficits, misinterpretations, and fluctuating awareness, she explains. She notes that family caregivers often describe psychotic symptoms in terms of lived behavior and emotional responses rather than using psychiatric labels.

Because caregivers rarely use clinical terminology, symptoms may be underreported or described indirectly, impeding detection of psychosis. For example, a caregiver may say something like, "Mama keeps being upset, thinking someone is in her room at night," rather than stating that she is having a delusion or hallucination. Additionally, ARP may be underreported because caregivers may worry that reporting psychotic symptoms will lead to institutionalization or overmedication.

Another recurring challenge is differentiating delusions from misunderstandings caused by memory loss or sensory impairment. For example, old traumatic memories may be experienced and/or reported by the person living with dementia as a new occurrence. Dr. Bonds Johnson observes that, "caregivers are trying to figure out what the person is seeing and why it's happening." She also emphasizes that psychotic symptoms often coexist with agitation, restlessness, fear, or anxiety, and that recognizing that these symptoms are arising due to psychosis is important for developing appropriate interventions.

Considering Emotional and Cultural Perspectives

The caregiver's interpretation of psychotic symptoms can shape care decisions, stress, and coping. Dr. Bonds Johnson explains that caregivers often struggle to handle ARP because the manifestations of psychotic symptoms can feel personal. For example, "when a person living with dementia accuses the caregiver of stealing, the caregiver feels hurt even when they know it's the disease." Caregivers also commonly question themselves, wondering whether the behavior reflects unmet needs or emotional needs.

Dr. Bonds Johnson emphasizes that cultural beliefs and spiritual interpretations can profoundly shape how families understand and report symptoms. She notes, "Black caregivers, for example, may interpret visions or voices through a spiritual lens, not as something that needs medication." As a result, some caregivers normalize certain hallucinations such as visions of deceased relatives and frame them positively rather than pathologically. "People in some cultures may say, 'She saw her mother last night,' and it's not considered a hallucination. It's viewed as a spiritual connection," she observes. Thus, culturally informed assessments and considerations of whether a symptom is causing distress are important when determining how to respond.

Dr. Bonds Johnson notes that existing assessment measures may not fully reflect lived experiences and cultural differences. "Caregivers don't describe symptoms in the language these scales use and that means we may be missing important information." Her research aims to develop culturally valid assessment tools and understand caregiver interpretations to inform better communication strategies and reduce disparities in diagnosis and treatment.

Caregiver Coping and Support Needs

Dr. Bonds Johnson emphasizes that caregivers need practical strategies, emotional support, and clear communication from clinicians. She points out that "caregivers want to know what to do in the moment when someone is scared, angry, or seeing something that isn't there."



Caregiver needs include understanding triggers, managing safety concerns, knowing when to seek help, and developing strategies to redirect or comfort the person. She notes that caregivers especially value step-by-step guidance on responding to hallucinations or delusions in real time.

Dr. Bonds Johnson educates caregivers to offer validation and reassurance, which is often more effective than trying to correct the person experiencing the delusion. "We explain that trying to correct the person usually makes things worse; you have to meet them where they are." Other strategies that are shared with caregivers include reducing overstimulation, improving lighting, limiting reflective surfaces, creating predictable routines, and using calming tones and body language.

Pharmacologic Treatment Considerations

Medications may be used when safety risks or severe distress are present, but Dr. Bonds Johnson emphasizes caution, particularly with antipsychotics, due to concerns about side effects and mortality risks in older adults. She starts with low doses and titrates upward slowly to identify the lowest effective dosage. She also considers genetic testing to help guide medication selection for mental health medications.

She stresses the importance of shared decision-making, "You have to explain the risks, but also the potential benefits, and then decide together what makes sense for each family." Ultimately, outcomes are improved when caregiver voices are integrated into treatment approaches. "Caregivers are the ones who witness these symptoms every day and they're the experts in what's really happening."

Kalisha Bonds Johnson, PhD, RN, PMHNP-BC, is a psychiatric-mental health nurse practitioner and researcher whose research centers on dementia caregiving and health disparities, informed by her clinical experience with psychosis in AD and related dementias. Her work focuses on how caregivers experience and respond to neuropsychiatric symptoms, including hallucinations, delusions, agitation, and behavioral disturbances.

GSA Resources

Behavioral and Psychological Symptoms of Dementia Resource Library
https://gsaenrich.geron.org/behavioral-and-psychological-symptoms-of-dementia

The GSA KAER Toolkit on Brain Health
KAERBrain.org



Additional Resources

Alzheimer's Association

Alzheimer's and Dementia Caregiver Support
https://www.alz.org/help-support/caregiving

Health Systems and Medical Professionals Resources: Treatments for Behavior
https://www.alz.org/alzheimers-dementia/treatments/treatments-for-behavior

American Psychiatric Association

Practice Guideline on the Use of Antipsychotics to Treat Agitation or Psychosis in Patients with Dementia
https://psychiatryonline.org/doi/pdf/10.1176/appi.books.9780890426807

Patient and Caregiver Guide: Antipsychotic Medications to Treat Agitation or Psychosis in Adults with Dementia
https://www.psychiatry.org/getmedia/077f82a6-8086-4b0a-a5d6-46cbf1270e17/APA-Dementia-Patient-and-Caregiver-Guide.pdf

Family Caregiver Alliance

A Caregiver's Guide to Managing Challenging Dementia Behavior: An Online Learning Series
https://www.caregiver.org/resource/a-caregivers-guide-to-managing-challenging-dementia-behavior-an-online-learning-series/

Caregiver's Guide to Understanding Dementia Behaviors
https://www.caregiver.org/resource/caregivers-guide-understanding-dementia-behaviors/

National Institute on Aging

Alzheimer's Caregiving
https://www.nia.nih.gov/health/alzheimers/caregiving

Alzheimer's Caregiving: Coping With Hallucinations, Delusions, and Paranoia
https://www.nia.nih.gov/health/alzheimers-changes-behavior-and-communication/alzheimers-caregiving-coping-hallucinations

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