Psychiatric Aspects of Dementia

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ABSTRACT

Purpose of Review: The psychiatric aspects of dementia are increasingly recognized as significant contributors to distress, disability, and care burden, and, thus, are of increasing interest to practicing neurologists. This article examines how psychiatric disorders are entwined with dementia and describes the predictive, diagnostic, and therapeutic implications of the psychiatric symptoms of dementia.

Recent Findings: Psychiatric disorders, particularly depression and schizophrenia, are associated with higher risk for late-life dementia. Psychiatric phenomena also define phenotypes such as frontotemporal dementia and dementia with Lewy bodies, cause distress, and amplify dementia-related disabilities. Management requires a multidisciplinary team, a problem-solving stance, programs of care, and pharmacologic management. Recent innovations include model programs that provide structured problem-solving interventions and tailored in-home care.

Summary: There is new appreciation of the complexity of the relationship between psychiatric disorders and dementia as well as the significance of this relationship for treatment, community services, and research.

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Dr Onyike discusses the unlabeled/investigational indications and evidence for efficacy and risks of prescribing antidepressants, antipsychotics, and other psychotropic agents for treating psychiatric aspects of dementia, as well as the alternatives to making these prescriptions, which include behavioral interventions, care programs, caregiver support and training, environment modulation, and structured recreation.

INTRODUCTION

The coincidence of primary (ie, neurodegenerative) dementia and psychiatric disorders is increasingly seen as a common occurrence and as a significant contributor to distress, handicap, care needs, and health costs. Psychiatric disorders have long been viewed as epiphenomena that complicate dementias that are ''essentially'' cognitive disorders, but contemporary views suggest: (1) some psychiatric disorders are integral to the dementia phenotype, (2) dementia may be foreshadowed by syndromes such as major depression and schizophrenia and states such as apathy and irritability, and (3) many psychiatric disorders complicate the course of the dementia by amplifying or adding to distress and disability. This article examines the overlap between psychiatric disorders and primary dementias and their predictive, diagnostic, and treatment implications.

LINKS BETWEEN PSYCHIATRIC DISORDERS AND DEMENTIA

The earliest descriptions of the primary dementias included psychiatric disturbances alongside the cognitive and functional symptoms. Alois Alzheimer identified anxiety, hallucinations, delusions, and agitation amid confusion and dense impairments of memory, orientation, and knowledge that would define the illness named for him.[1] His contemporaries, Arnold Pick, Paul Sérieux, and Joseph Dejerine, described midlife deterioration of conduct and language, which are the first descriptions of frontotemporal dementia (FTD).[2–4] From these beginnings, primary dementias came to be viewed narrowly as cognitive disorders, but in the past 35 years, observations of the ubiquity

of psychiatric disorders in dementia and that patients experience one or more disturbances of mood, behavior, perception, and thought content have been replicated numerous times.[5–9]

Psychiatric symptoms in neurodegenerative disease can arise from the dementia phenotype, or from psychiatric disorders or psychological vulnerability preceding the dementia. Additional risk factors for development of psychiatric symptoms in neurodegenerative disease include a family history of psychiatric illness, uncontrolled pain, and systemic illnesses that give rise to delirium. Nearly all community-dwelling elderly individuals with dementia will develop psychiatric symptoms within 5 years, which commonly includes apathy, depression, anxiety, and, often, combinations of these and other symptoms.[10–15] Predementia states such as mild cognitive impairment (MCI) feature psychiatric disorders, but less commonly than dementia.[12,16] While most psychiatric states manifest as episodes, apathy associated with dementia is usually a persistent state,[17] and its frequency and severity increases along the continuum from prodrome (such as MCI) to advanced dementia.[16,17] Psychosis in dementia sometimes persists, especially in the phenotypes it defines such as dementia with Lewy bodies (DLB).[15] Some psychiatric disorders are wont to appear early in the illness (such as apathy, anxiety, depression, and irritability), whereas other symptoms such as hallucinations, delusions, roaming, and abnormal feeding tend to appear later. As a general observation, psychiatric states are more common in dementia clinics and residential care settings than they are in the community.

PSYCHIATRIC DISORDERS FORESHADOW COGNITIVE DECLINE AND DEMENTIA

Primary psychiatric disorders usually develop in youth and early adulthood, although late-life variants of depression, anxiety, mania, and psychosis are recognized. In contrast, primary dementias are generally conditions of midlife and late life, although youth and young-adult presentations occur. Psychiatric disorders preceding cognitive dysfunction and dementia have long been recognized in schizophrenia, since Emil Kraepelin described dementia praecox as a chronic disintegration of cognition and conduct beginning in youth.[18,19] Schizophrenia is now viewed as a heterogenous psychosis in which cognitive dysfunction is common, and progressive cognitive decline and dementia rare. Schizophrenia is believed to arise from aberrant neurodevelopment, with deficiencies in dopamine and glutamate neurotransmission culminating in the disintegration of mental function in early adulthood. Most cases of schizophrenia feature static deficits in attention, executive functions, and social reasoning from the outset, alongside the illness-defining hallucinations and delusions. These cognitive disabilities undermine treatment adherence and psychosocial adjustment.

Only a minority of patients with schizophrenia develop dementia in later life (ie, decades after the onset of the psychotic state).[20] These patients have dense impairments of memory and executive functions, with relative sparing of language and visuospatial functions.[21] A recent 18-year observational study of a large Danish schizophrenia cohort showed a greater than twofold higher risk for dementia than in the general population.[22] The risk was higher in midlife than in late life, an observation not easily explained by Alzheimer disease (AD), where a higher frequency in older members of the cohort is expected. Neuropathologic studies of cohorts and large series have observed lower brain weight in subjects who had schizophrenia

KEY POINTS

- The majority of patients with dementia experience one or more disturbances of mood, behavior, perception, and thought content.
- While most psychiatric states manifest as episodes, apathy associated with dementia is usually a persistent state.
- Primary psychiatric disorders usually develop in youth and early adulthood, although first episodes of depression, anxiety, mania, and psychosis in midlife and in the elderly are recognized.
- A subset of individuals with schizophrenia develop dementia in later life, decades after the onset of the psychotic state.

KEY POINT

- Depressive symptoms have been associated with cognitive decline and transitions to dementia in individuals with mild cognitive impairment and other mild cognitive disorders.

and dementia, compared to those who had schizophrenia and no dementia.[23] A more recent analysis showed that neuritic plaques and neurofibrillary tangles that did not meet the threshold for a formal AD diagnosis showed a positive correlation with dementia severity.[24] Thus, dementia in schizophrenia appears to be related primarily to insidious brain atrophy and, for some, a consequent lowering of the threshold for coincident neurodegeneration to cause dementia.

It may be that some cases of schizophrenia, a schizophreniform state, or other psychotic presentations, are prodromes of a dementia. One study of progranulin (*GRN*) mutation carriers describes a family in which two siblings manifested a classic schizophrenia phenotype and a third sibling had a typical FTD.[25] It is also now increasingly recognized that up to 20% of carriers of the *C9ORF72* mutation associated with FTD and amyotrophic lateral sclerosis experience psychosis,[26–28] although it is still uncertain what proportion present with primary psychosis. Earlier clinicopathologic analysis of a brain bank cohort has suggested that schizophreniform and other psychiatric presentations are more likely in patients with FTD who are younger than 45 years of age, whereas later-life presentations are more likely to feature impairments of cognition and social conduct.[29]

Cognitive dysfunction has been observed in cases of remitted major depression and bipolar disorder, particularly affecting attention, executive function, and memory, and depression appears to be associated with increased risk for late-life dementia.[30] The risk for dementia appears to be higher in individuals with more severe depressive symptoms and appears to be associated with the frequency of admission to psychiatric wards for depression and bipolar disorder.[30,31] Whether the risk for dementia is greater for young-onset versus late-onset depression is still unsettled as studies have yielded mixed results.[30,32] Recent data from a Swedish cohort of military conscripts suggests that depression in youth is associated with a nearly twofold higher risk for young-onset dementia,[33] although this finding has not been replicated. Whereas a causal relationship between major depression and dementia has not been established, depressive symptoms may appear in the dementia prodrome (**Case 11-1**). Furthermore, depressive symptoms have been associated with cognitive decline and transitions to dementia in individuals with MCI and other mild cognitive disorders (ie, states of cognitive dysfunction that do not reach a threshold for dementia, or match formal definitions for MCI). Psychiatric disorders are more frequently observed in elderly patients with MCI and other mild cognitive disorders than in their age-matched peers with normal cognition, and these associations have been linked to worse cognition and functional disabilities.[16,34,35] Studies of community-based elderly individuals have shown associations between depression, apathy, and irritability/agitation, and transitions from normal cognition to MCI, and from MCI to dementia.[36–40] A recent meta-analysis reached the same conclusions, showing that transitions from mild cognitive disorders to dementia are predicted by depression (in community samples) and apathy (in the clinic).[41]

PSYCHIATRIC PHENOMENA AS DEFINING FEATURES OF DEMENTIA

Although dementia syndromes are widely viewed essentially as cognitive disorders, many of these are defined by

Case 11-1

A 58-year-old man, who had formerly worked as a business manager, developed a severe major depression with anorexia and severe weight loss 10 years prior to his presentation at the neuropsychiatry clinic. He did not recover fully despite antidepressant therapy and, 3 years into his illness, developed irritability, religious passions, confusion, indecisiveness, and, intermittently, suicidal thoughts. Five years into the illness, symptoms emerged of inattention, disorganization, and misreading of social cues. He became talkative, loud, self-centered, and compulsive. In the last year, symptoms included low mental acuity, inattention, lack of spontaneity, indifference, inertia, inflexibility, literalness, rigid moralizing, slovenliness, jocularity, irritability, impulsiveness, restlessness, and overeating. His behavior had engendered conflict in his marriage and in his community. A neuropsychological assessment ordered by his psychiatrist and performed in the month before the current visit showed impairments in attention, executive functions, and emotion recognition. He had no other significant past medical history, and his current medications included paroxetine and lamotrigine. In the clinic, the mental status examination showed paucity of thought, indifference, and shallow affect. He did not have depressed mood, suicidal thoughts, anxiety, paranoia, or hallucinations. Compulsive behavior was not observed. Neurologic examination showed normal cranial nerve, motor, sensory, and coordination testing. Upper and lower extremity reflexes, including plantar responses, were normal. He did not have primitive reflexes. Brain MRI showed mild bilateral orbitofrontal atrophy, and fluorodeoxyglucose positron emission tomography (FDG-PET) imaging showed low uptake in the left cerebral hemisphere that was worse in the left frontal lobe.

Comment. This case illustrates a psychiatric syndrome as the initial presentation of a primary dementia: behavioral variant of frontotemporal dementia. The case demonstrates the diagnostic misdirection, dysfunction, and disability that psychiatric states can produce and shows the types of diagnostic data that reveal the neurodegenerative origin of the illness. The reader is also reminded that primitive reflexes are not reliable indicators of frontal lobe dysfunction, as they may be absent in the early stages of frontotemporal dementia.

KEY POINT

- Alzheimer disease typically presents a variety of psychiatric symptoms, most commonly apathy, depression, anxiety, irritability, agitation, and delusions.

psychiatric phenomena. AD presents a variety of these states, most commonly apathy, depression, anxiety, irritability, agitation, and delusions. Hallucinations and mania are uncommon in AD.[14] Vascular dementia also presents many of the same symptoms, but especially apathy, depression, anxiety, and irritability. On the other hand, patients who have DLB or Parkinson disease dementia (PDD) often experience visual illusions, pareidolia (perception of ambiguous visual forms as meaningful objects) and hallucinations, paranoia, delusions, anxiety, and depression. Rapid eye movement (REM) sleep behavior disorder is also characteristic of these conditions[42] and has been associated, albeit less frequently, with progressive supranuclear palsy, corticobasal degeneration, FTD with parkinsonism that is caused by mutations in the gene for microtubule-associated protein tau (*MAPT*), and some forms of spinocerebellar ataxia. In these conditions, the REM sleep behavior disorder may be the earliest symptom, constituting a prodrome that precedes the motor

KEY POINTS

- Cognitive deficits and behavioral symptoms are present in patients with Huntington disease beginning approximately 15 years prior to motor diagnosis.
- The behavioral variant of frontotemporal dementia typically presents as a combination of socially offensive behaviors, such as indifference, impatience, carelessness, insensitivity, jocularity, intrusiveness, distractibility, impulsiveness, stereotyped behaviors, compulsions, food craving and gluttony, and slovenliness, and many of these patients do not have noticeable cognitive deficits until illness is established.
- Visual illusions and hallucinations develop early in dementia with Lewy bodies and become florid, persistent and, in many cases, are associated with misidentification, paranoia, delusions, and anxiety.
- Psychiatric symptoms in dementia have been linked to more severe cognitive and functional disabilities and faster progression to severe dementia and death.

syndrome or dementia syndrome by many years. Huntington disease features a triad of cognitive, affective, and motor phenomena. The motor features, typically chorea, athetosis, tics, bradykinesia, incoordination, and ideomotor apraxias, are preceded by executive dysfunction, apathy, irritability, depression, and anxiety.[43] Such cognitive deficits and behavioral symptoms are present beginning about 15 years prior to motor diagnosis.[44] In asymptomatic Huntington disease mutation carriers, the earliest cognitive deficits are found in attention, working memory, verbal learning, verbal long-term memory, and learning of random associations.[45] Still, clinical diagnosis in Huntington disease emphasizes the motor phenomena and genetic testing; the cognitive deficits and psychiatric phenomena lack the specificity for differential diagnosis but may facilitate early recognition in individuals who are known carriers of the Huntington mutation or have a positive family history.[46]

For some dementia syndromes, psychiatric states are defining elements of the illness and its diagnosis. Psychiatric phenomena that define the dementia syndrome are integrated into the diagnostic criteria for FTD and DLB, for example.[47,48] To illustrate further, FTD is characterized by gross decline in conduct (ie, the behavioral variant) or speech and language (the language variant). The behavioral variant of FTD typically presents as a combination of socially offensive behaviors, such as indifference, impatience, carelessness, insensitivity, jocularity, intrusiveness, distractibility, impulsiveness, stereotyped behaviors, compulsions, food craving and gluttony, and slovenliness, and many of these patients do not have noticeable cognitive deficits until illness is established. Psychosis, once considered a rarity in FTD, was common in a recently described neuropathology cohort and may distinguish a subtype of FTD caused by mutations in the *C9ORF72* gene, although the diagnostic utility of this association has not been examined. Visual illusions and hallucinations develop early in DLB and become florid, persistent, and, in many cases, associated with misidentification, paranoia, delusions, and anxiety.[26–28,49] PDD manifests illusions, hallucinations, paranoia, and delusions very late in the illness, usually many years after the development of parkinsonism, subclinical cognitive dysfunction, anxiety, and depression. In PDD, visual hallucinations, paranoia, and anxiety often arise as complications of dopaminergic therapy. REM sleep behavior disorder is a characteristic of DLB and Parkinson disease that, when present in advance of cognitive and motor dysfunction, facilitates the clinical diagnosis.[42,50,51]

IMPACTS OF PSYCHIATRIC DISORDERS ON DEMENTIA

Psychiatric disorders are frequently the main clinical focus because they bring about distress directly and can exacerbate other morbidity. These states increase the demands placed on relatives and other caregivers and, thus, the levels of caregiver stress, and they also result in higher rates of resource utilization.[52] Psychiatric symptoms in dementia have also been linked to more severe cognitive and functional disabilities and faster progression to severe dementia and death.[53,54] It has been estimated, for example, that nearly one-third of all dementia treatment costs are accounted for by psychiatric symptoms.[55,56] These symptoms also shape the quality of life for many individuals with dementia. They are also major drivers of transfers to residential

care, where they cause higher morbidity and strain on caregivers.[57–60]

PSYCHIATRIC SYMPTOMS AND DIAGNOSTIC CONSIDERATIONS

The clinical history is the linchpin of the diagnostic examination of patients presenting with cognitive or behavioral symptoms, and interviewing a source who has an intimate knowledge of the patient (usually a spouse, a close relative or friend, or a longtime caregiver) is imperative. The goal of taking the patient's clinical history is to capture all symptoms, describe how the syndrome has developed over time, and make contrasts between the current state and the patient's lifelong cognitive capacity, temperament, conduct, and habits.

The following are key elements of the clinical history:

- Interviewing the source privately facilitates candor and disclosure. This author typically asks the patient's permission to speak with their source.
- Developing the chronology of symptoms defines the syndrome and the place of psychiatric symptoms within the context of the disease.
- Cataloging the symptoms and their severity defines the degree of disability and distress.
- Identifying preceding or concurrent psychiatric states helps clarify whether the patient has a primary psychiatric disorder.
- Describing the context in which current psychiatric states emerged may point to modifiable environmental, behavioral, or social factors.
- Interrogating other physiologic systems allows detection of systemic derangements (such as thyroid dysfunction) that may mimic psychiatric disorders.
- Documenting disabilities is vital for planning treatments and rehabilitation and for securing public assistance, disability benefits, and other resources.

The mental status examination includes not only detailed cognitive testing, but also a systematic examination of each psychiatric domain (eg, conduct, mood, thought processes, percepts). (For more information on the mental status examination, refer to the article "The Mental Status Examination in Patients With Suspected Dementia" by Murray Grossman, MD, FAAN, and David J. Irwin, MD, in this issue of *Continuum*.[61]) The examination provides a characterization of the psychiatric status of the patient and captures symptoms of diagnostic value and informs the therapeutic approach.

Separating apathy from depression at the bedside is valuable, as the former is a signal characteristic of many dementia phenotypes and is often mistaken for depression. Patients with apathy appear passive, disinterested, and aloof, but do not experience a sad or depressed mood. In contrast, depression is associated with a sad mood, low self-worth, feelings of guilt, and pessimism. Apathy is best treated with structured behavioral routines and psychostimulants, but some cases have responded to bupropion (other antidepressants are ineffective).

Quantitative assessments of symptoms can supplement the clinical examination for differential diagnosis, monitoring, and research. Psychometric instruments are used to provide measurements of the psychiatric phenomena and their correlates (particularly cognitive profiles and functional disabilities) that facilitate differential diagnosis, judgment of severity, and monitoring of temporal change and treatment responses. Psychometric measurements are based

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- Psychometric instruments are used to provide measurements of the psychiatric phenomena and their correlates (particularly cognitive profiles and functional disabilities) that facilitate differential diagnosis, judgment of severity, and monitoring of temporal change and treatment responses.

KEY POINT

- A multidisciplinary team model involving physicians, nursing, physical therapy, and other rehabilitative services, as well as social work and caregiver/family advocacy is often required for the optimal management of patients with psychiatric disorders and dementia.

on self-reports, caregiver interviews, or direct observations, and may be structured or semistructured. Since self-reports are bedeviled by the loss of self-monitoring and decisional capacities in people with dementia, measurements are usually sourced from caregiver interviews or direct observations. Two classes of instruments are used: standard psychiatric instruments adapted to dementia practice and research objectives as well as specially designed scales and questionnaires. The Neuropsychiatric Inventory (NPI),[62] the most widely used tool for measuring psychiatric phenomena in dementia, is a semistructured screen-and-probe interview of the patient's spouse, caregiver, or other source. It covers a swarth of psychiatric states, and versions have been developed for assisted living and nursing home settings. The Neuropsychiatric Inventory Questionnaire (NPI-Q),[63] a short version of the NPI, has found wide application in clinical practice and research. Numerous other tools for measuring specific psychiatric phenomena in elderly individuals with dementia exist, such as the Geriatric Depression Scale and the Frontal Behavioral Inventory for use in FTD.[64–67]

At Johns Hopkins Hospital, we have described an algorithmic approach,[68] in which the temporal clustering of cognitive, neuropsychiatric, and motor symptoms and signs is used to define syndrome categories that facilitate differential diagnosis (**Figure 11-1**). The method classifies syndromes into: (1) primarily cognitive syndromes, such as the canonical (amnestic) AD phenotype and the primary progressive aphasias, in which the cognitive deficits are the signal features; (2) predominantly psychiatric syndromes such as the behavioral variant of FTD and DLB, where psychiatric disorders overshadow the cognitive impairments; and (3) syndromes defined by motor dysfunctions that usually overshadow cognitive and psychiatric phenomena, such as progressive supranuclear palsy and corticobasal degeneration.[68]

The alternative approach is to take a problem-solving stance, based on the understanding that some of the psychiatric disturbances seen in dementia may be maladaptive reactions or patient-caregiver conflicts, rather than symptoms of neurophysiologic disturbance. In this perspective, the psychiatric state is understood as arising from the interplay of personal and environmental factors, implying that they can be extinguished or reshaped by behavioral and environmental manipulations.

PERSPECTIVES ON CLINICAL MANAGEMENT

A multidisciplinary team model involving physicians, nursing, physical therapy, and other rehabilitative services, as well as social work and caregiver/family advocacy is often required for the optimal management of patients with psychiatric disorders and dementia. At the author's institution, behavioral care, case management, pharmacologic prescriptions, and physical, speech/language, and occupational therapy are melded into an individualized treatment plan to relieve distress, provide direction, promote adaptation, and optimize quality of life.[69] A healthy partnership with the patient and the caregiver, and their education about psychiatric symptoms, dementia, and the interventions are vital for success.

The clinical formulation is the framework for managing the psychiatric aspects of dementia. Where the formulation emphasizes specific disorders, pharmacologic intervention specific to the underlying neurodegenerative disease or psychiatric disorder may be indicated (ie, cholinesterase inhibitors for

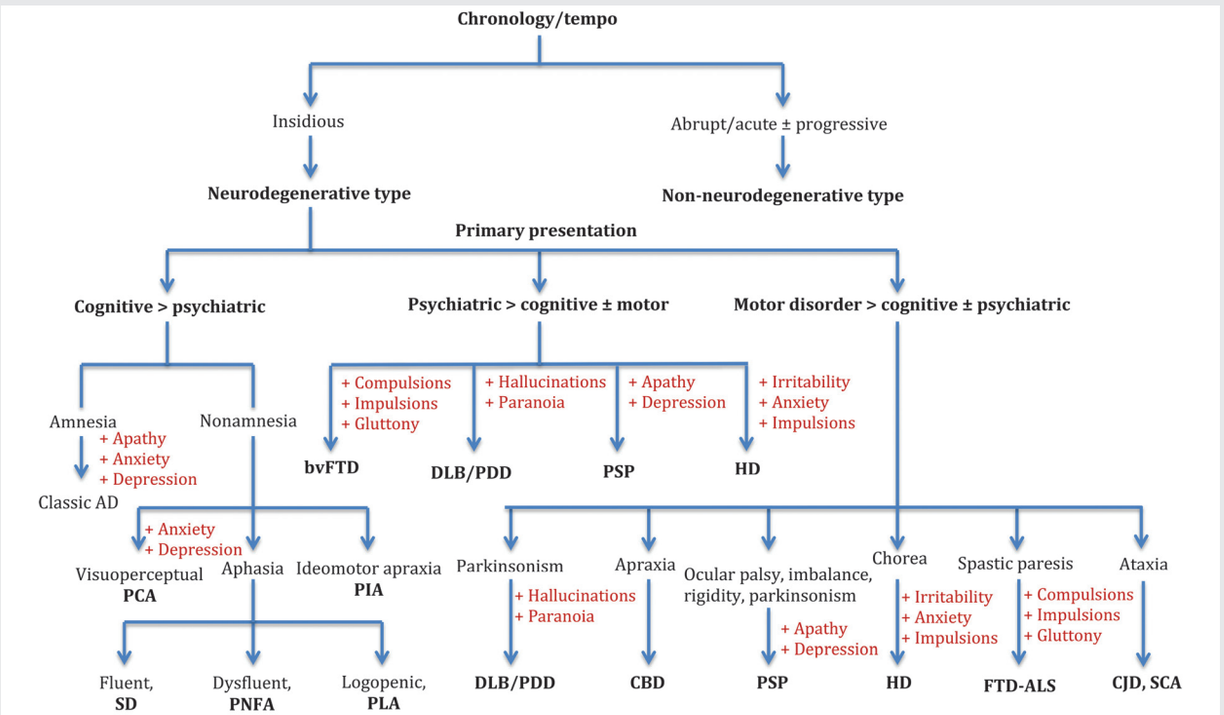

FIGURE 11-1

Algorithm for identifying the neurodegenerative types of dementia. The diagram shows how symptom clusters and the syndromes they signify drive the differential diagnosis of dementia. Cognitive and motor syndromes define pathways and, when complemented by psychiatric states (*red text*), may define specific dementia diagnoses (such as the behavioral variant of frontotemporal dementia [bvFTD], frontotemporal dementia with amyotrophic lateral sclerosis [FTD-ALS], and dementia with Lewy bodies [DLB]).

AD = Alzheimer disease; CJD = Creutzfeldt-Jakob disease; HD = Huntington disease; PCA = posterior cortical atrophy; PDD = Parkinson disease dementia; PIA = progressive ideomotor apraxia; PLA = progressive logopenic aphasia; PNFA = progressive nonfluent aphasia; PSP = progressive supranuclear palsy; SCA = spinocerebellar ataxia; SD = semantic dementia.

AD or selective serotonin reuptake inhibitors [SSRIs] for depression). When problem solving is emphasized, psychosocial approaches such as environment remodeling, structured recreation, caregiver education and training, and psychotherapy are more pertinent. One commonly used psychosocial approach calls for formal analysis of the context and antecedents of the psychiatric state, so as to identify and remove (or manage) precipitating factors. A patient who has exhibited agitated resistance of morning hygiene routines might do much better when allowed to wake naturally or to eat first. The patient might also respond to nonspecific interventions directed at the environment, their comfort, or the patient-caregiver relationship.[70] The choice of approach derives from careful analysis of the context of the psychiatric state. Another model views psychiatric states as catastrophic reactions to frustration, failure, or being thwarted, in which case, simplifying tasks and providing direction and assistance can go a long way. Yet another approach is to examine the patient-caregiver dyad for dysfunctional interactions that will be corrected through caregiver counseling and skill-building training sessions. The efficacy of structured skill-building programs and tailored problem-solving methods

KEY POINT

- Where the clinical formulation for managing the psychiatric aspects of dementia emphasizes problem solving, psychosocial approaches such as environment remodeling, structured recreation, caregiver education and training, and psychotherapy are pertinent.

KEY POINT

■ Typical and atypical antipsychotic agents are associated with a high risk for mortality in patients who have dementia.

for dementia care has been demonstrated in formal trials that examined effects on psychiatric disorders and caregiver coping.[71–74]

Pharmacologic interventions for psychiatric symptoms in dementia mirror standard psychiatric practice, albeit with more cautious dosing, and they remain in need of the validation of formal clinical trials.[70,75,76] The nationwide Clinical Antipsychotic Trials of Intervention Effectiveness did not demonstrate efficacy for treatment of dementia-related psychosis, agitation, and aggression, although a secondary analysis suggested the atypical agents may have value, but that any benefits might be offset by worsening of cognitive disabilities, somnolence, parkinsonism, weight gain, metabolic derangements, and death.[77,78] In DLB and PDD, quetiapine and clozapine are the only antipsychotics recommended given the higher risk of extrapyramidal side effects with other antipsychotic medications. Other antipsychotic drugs must be avoided in these patients as they may precipitate life-threatening rigidity and autonomic dysfunction. The atypical antipsychotics are associated with mortality from cardiovascular and cerebrovascular events (and other causes of mortality, including infectious causes) in patients who have dementia.[79,80] The risk is higher still with the conventional agents.[81–85] Where these agents are prescribed, risk can be mitigated by routine use of planned discontinuation trials, in line with evidence that most psychiatric states in dementia do not persist longer than 3 to 6 months and results from discontinuation trials that show benefit.[14,86–90]

The development of structured behavioral programs that can be readily disseminated are now underway, which will facilitate intervention in the home. One innovation is the Describe, Investigate, Create, Evaluate (DICE) method (**Figure 11-2**), which requires that the problem be specified (describe) along with the contexts, triggers, and modifiers (investigate), that a collaboration is undertaken with the caregiver to devise a program of care (create), and that the implementation and results are monitored (evaluate).[52] The DICE approach is now part of the Centers for Medicare and Medicaid Services toolkit of nonpharmacologic programs for dementia care, which hopefully will stimulate broad implementation, dissemination, and evaluation. Another innovation is the Maximizing Independence (MIND) at Home study, which has used multidisciplinary teams for home-based case management that consists of individualized care planning with monitoring, links to local services, dementia-related education, and caregiver skills building, which resulted in far fewer transfers from home to residential care and higher quality-of-life ratings than usual care in the pilot study.[91] A larger follow-up study, now underway, is aimed at demonstrating the efficacy and scalability of this program.

Pharmacologic interventions are still indicated in some cases, owing to the biological grounding of some of the psychiatric symptoms of dementia; visual hallucinations in DLB, for example, cannot be formulated as arising from a caregiver's mishandling of a situation, a patient's misunderstanding, misinterpretation, or overreaction, or other social mishap. Psychiatric states such as these warrant pharmacologic intervention when they cause distress, are offensive, or bring about significant morbidity (such as when depression causes anorexia, weight loss, and malnutrition). Thus, present-day research continues the search for physiologic indices of psychiatric states in dementia, with the hope that biomarkers will lead to more effective case recognition and physiologic targets for drug development.

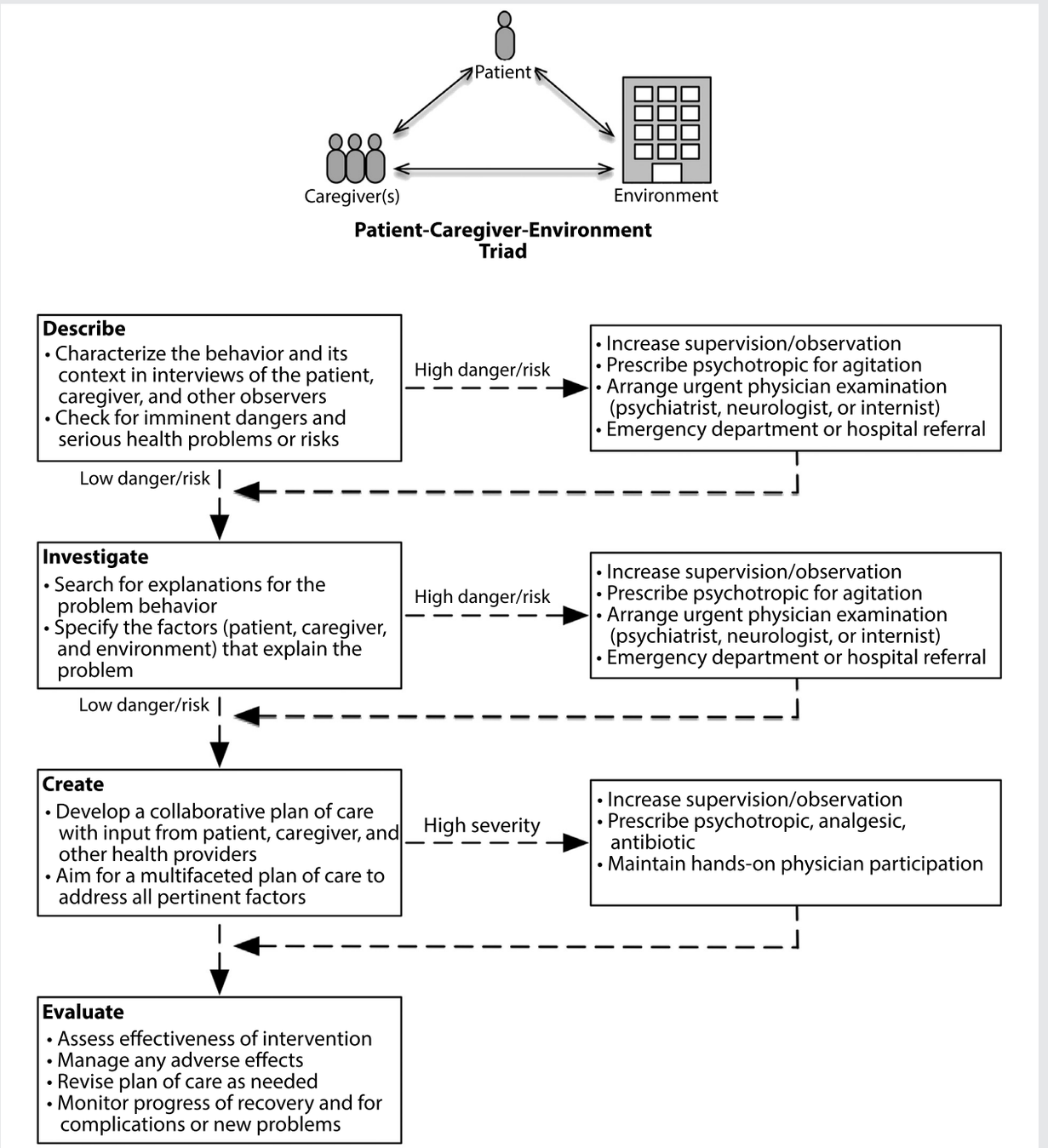

FIGURE 11-2 DICE (describe, investigate, create, and evaluate) approach to the examination, formulation, and management of dementia-related behavioral problems. A two-part flow diagram is shown, illustrating the socially dynamic context of the DICE approach (ie, the triad of patient, caregiver, and environment), the progression in its implementation, and the recursive routines for managing high-acuity states. The bidirectional arrows in the triad emphasize the reciprocity of the dynamics that shape many behavioral problems encountered in dementia care.

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CONCLUSION

The observation that psychiatric states and dementias are entwined is not new, but appreciation of the complexity of these relationships and their significance for treatment, community services, and research is a contemporary development. These relationships reflect the diversity of dementia types, as well as the reality that psychiatric syndromes and symptoms may predict dementia, and they may also define and complicate the condition. Evaluation of psychiatric symptoms in dementia is important in the ascertainment of the care needs of the patients and their families. Recognition of psychiatric disorders can facilitate the recognition of dementia cases, their prompt diagnosis, and, in turn, tailored clinical care.

As the psychotherapeutic, psychosocial, and pharmacologic interventions used to treat psychiatric states in dementia borrow heavily from standard psychiatric practice, their refinement requires close collaborations involving neurology, psychiatry, neuropsychology, gerontology, nursing, and rehabilitation medicine, among others. Progress also requires reexamination of the concept of dementia and its nosology, and a deemphasizing of traditional psychiatry-neurology boundaries.[92]

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