TREATING DELIRIUM

A Quick Reference Guide

Based on *Practice Guideline for the Treatment of Patients With Delirium,* originally published in May 1999.

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Introduction

"Treating Delirium: A Quick Reference Guide" is a summary and synopsis of the American Psychiatric Association's *Practice Guideline for the Treatment of Patients With Delirium,* which was published in *The American Journal of Psychiatry* in May 1999 and is available through Americian Psychiatric Publishing, Inc. The Quick Reference Guide is not designed to stand on its own and should be used in conjunction with the full text of the Practice Guideline. Algorithms illustrating the treatment of delirium are included.

Statement of Intent

The Practice Guidelines and the Quick Reference Guides are not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and practice patterns evolve. These parameters of practice should be considered guidelines only. Adherence to them will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgment regarding a particular clinical procedure or treatment plan must be made by the psychiatrist in light of the clinical data presented by the patient and the diagnostic and treatment options available.

The development of the APA Practice Guidelines and Quick Reference Guides has not been financially supported by any commercial organization.

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A. Diagnosis and Assessment

1. Diagnosis of Delirium

- Conduct a thorough assessment of the patient's symptoms, including all DSM-IV criteria for delirium as well as associated features of delirium (e.g., disturbances in sleep, psychomotor activity, and emotions).
- Distinguish among differential diagnostic possibilities; for patients with features of delirium, the most common issue is determining whether the patient has dementia, delirium, or both.
- Obtain information from medical records, psychiatric records, medical staff, family, and other sources.

2. Assessment of Clinical Status

Conduct a thorough assessment of the patient's clinical status, including

- the patient's potential for harm to self or others,
- the availability of means for harm to self or others and the lethality of those means, and
- the presence of hallucinations and delusions.

Evaluate comorbid general medical conditions and past medical history.

- Patients with delirium require a comprehensive evaluation of their current and past medical conditions and treatments, including medications, with special attention paid to those conditions or treatments that might be contributing to the delirium.
- Evaluation by the psychiatrist is frequently coordinated and conducted jointly with the patient's internist, neurologist, and other primary care and specialty physicians.

2. Assessment of Clinical Status *(continued)*

Conduct a thorough history of current patterns of alcohol and other substance use.

Conduct a thorough assessment of other current psychiatric disorders or symptoms.

Conduct a thorough assessment of the patient's past psychiatric history, including
- previous episodes of delirium,
- dangerousness to self or others,
- previous treatment responses, and
- prior alcohol and other substance use.

Conduct a thorough assessment of the patient's psychosocial history, including
- family and interpersonal relationships;
- premorbid psychosocial, work, living, and cultural environment; and
- availability of family members or other surrogates capable of helping with decision making for patients who lack decisional capacity.

Knowledge of the patient's and family's psychological and social characteristics may be helpful in dealing with the anxieties and reactions of patients and families.

B. Psychiatric Management

Throughout the formulation of a treatment plan and the subsequent course of treatment, the following principles of psychiatric management should be kept in mind:

1. Coordinate with other physicians.

Treatment of patients with delirium frequently requires joint and coordinated management among psychiatrists and other general medical and specialty physicians.

2. Identify etiological factors and correct them.

Review information from the patient's medical and psychiatric history, family members, and other individuals close to the patient.

Conduct indicated laboratory and radiological investigations to determine the underlying cause or causes of the patient's delirium. The choice of specific tests will be guided by the results of clinical evaluations and may include those outlined in Table 1 (p. 8).

3. Initiate acute interventions.

- Patients with delirium may have general medical conditions that require urgent therapeutic intervention, even before an etiology for the delirium is identified.
- Increased observation and monitoring of the patient's general medical condition are often necessary, including frequent monitoring of vital signs, fluid intake and output, and oxygenation level.

TABLE 1. Assessment of Patients With Delirium

Physical status

- History
- General physical and neurological examinations
- Review of vital signs and anesthesia record if postoperative
- Review of general medical and psychiatric records
- Careful review of medications and correlation with behavioral changes

Mental status

- Interview
- Cognitive tests (e.g., clock face, digit span, Trail Making tests)

Basic laboratory tests (consider for all patients with delirium)

- Blood chemistries: electrolytes, glucose, calcium, albumin, blood urea nitrogen (BUN), creatinine, SGOT, SGPT, bilirubin, alkaline phosphatase, magnesium, phosphorus
- Complete blood count (CBC)
- Electrocardiogram (ECG)
- Chest X-ray
- Arterial blood gases or oxygen saturation
- Urinalysis

Additional laboratory tests (order as indicated by clinical condition)

- Urine culture and sensitivity (C&S)
- Urine drug screen
- Blood tests (e.g., VDRL, heavy metal screen, B_{12} and folate levels, antinuclear antibody [ANA], urinary porphyrins, ammonia level, human immunodeficiency virus [HIV], erythrocyte sedimentation rate [ESR])
- Blood cultures
- Serum levels of medications (e.g., digoxin, theophylline, phenobarbital, cyclosporine)
- Lumbar puncture
- Brain computerized tomography (CT) or magnetic resonance imaging (MRI)
- Electroencephalogram (EEG)

Source. Adapted from Trzepacz PT, Wise MG: "Neuropsychiatric Aspects of Delirium," in *The American Psychiatric Press Textbook of Neuropsychiatry,* Third Edition. Edited by Yudofsky SC, Hales RE. Washington, DC, American Psychiatric Press, 1997, pp. 447–470.

4. Provide other disorder-specific treatments.

Reversible causes of delirium that are identified should be promptly treated as noted in Table 2 (p. 10).

5. Monitor and ensure safety.

- Monitor patients with delirium for their potential to harm themselves or others. Harmful behaviors are often inadvertent or are responses to hallucinations or delusions.
- Take appropriate measures to prevent harm to self or others. Whenever possible, the least restrictive but effective measures should be employed.

6. Assess and monitor psychiatric status.

- Regularly monitor symptoms and behaviors, as they can fluctuate rapidly.
- Adjust treatment strategies accordingly.

7. Establish and maintain alliances with patient and family.

- Establish a supportive therapeutic stance with patients.
- Establish strong alliances with the patient's family members, multiple clinicians, and caregivers.

8. Educate regarding the illness.

- Education regarding the current delirium, its etiology, and its course should be provided to patients and tailored to their ability to understand their condition.
- Education regarding delirium may also be extremely beneficial to patients' families, nursing staff, and other medical clinicians.

TABLE 2. Examples of Reversible Causes of Delirium and Their Treatments

Condition	Treatment
Hypoglycemia or delirium of unknown etiology where hypoglycemia is suspected	• Tests of blood (usually fingerstick) to establish diagnosis • Thiamine hydrochloride, 100 mg i.v. (before glucose) • 50% glucose solution, 50 mL i.v.
Hypoxia or anoxia (e.g., due to pneumonia, obstructive or restrictive pulmonary disease, cardiac disease, hypotension, severe anemia, or carbon monoxide poisoning)	• Immediate oxygen
Hyperthermia (e.g., temperature above 40.5°C or 105°F)	• Rapid cooling
Severe hypertension (e.g., blood pressure of 260/150 mm Hg, with papilledema)	• Prompt antihypertensive treatment
Alcohol or sedative withdrawal	• Appropriate pharmacological intervention (see APA's *Practice Guideline for the Treatment of Patients With Substance Use Disorders*) • Thiamine, intravenous glucose, magnesium, phosphate, and other B vitamins, including folate
Wernicke's encephalopathy	• Thiamine hydrochloride, 100 mg i.v., followed by thiamine daily, either intravenously or orally
Anticholinergic delirium	• Withdrawal of offending agent • In severe cases, physostigmine should be considered unless contraindicated

9. Provide postdelirium management.

- Following recovery, reiterate explanations to patient and family about delirium, its etiology, and its course in order to prevent recurrences.
- Provide education regarding the apparent cause or causes of and risk factors for delirium.
- Employ supportive interventions for patients experiencing distressing postdelirium symptoms.

C. Environmental and Supportive Interventions

1. Environmental Interventions

Employ environmental interventions to reduce factors that may exacerbate delirium.
These interventions include
- changing the lighting to cue day and night,
- reducing monotony and overstimulation and understimulation,
- correcting visual and auditory impairments (e.g., retrieve glasses, hearing aids), and
- rendering the patient's environment less alien by having familiar people and objects present (e.g., family photographs).

2. Structure and Support for Patients

Reorient the patient to person, place, time, and circumstances.
Reorientation should be provided by all who come into contact with the patient.

Provide reassurance to patients that the deficits they are experiencing are common but usually temporary and reversible.

3. Support and Education for Families

Educate the patient's family and friends about delirium and reassure them that the patient's deficits are usually temporary and reversible.

Encourage the patient's family and friends to reassure and reorient the patient and increase the familiarity of the patient's environment by increasing staff time with the patient and by bringing in familiar objects to show the patient.

D. Specific Somatic Interventions

1. Antipsychotic Medications

Haloperidol

High-potency antipsychotic medications, such as haloperidol, are the pharmacological treatment of choice for delirium.

- Haloperidol may be administered orally, intramuscularly, or intravenously.
- Initial dosages of haloperidol are in the range of 1 to 2 mg every 2 to 4 hours, with lower starting dosages for elderly patients (e.g., 0.25 to 0.50 mg every 4 hours).
- Continuous intravenous infusion of haloperidol may be considered for severely ill patients with refractory symptoms requiring multiple bolus doses. With ECG monitoring, intravenous haloperidol can be initiated with a bolus dose of up to 10 mg followed by infusion of up to 5 to 10 mg/hour.
- When using haloperidol to treat delirium, monitor ECG. For QT_C intervals greater than 450 msec or greater than 25% over baseline, consider cardiology consultation and antipsychotic medication discontinuation.

Droperidol

- Droperidol may be considered for acute agitation because of its more rapid onset of action, greater sedative properties, and shorter half-life.
- Droperidol may be administered either alone or followed by haloperidol.
- As with haloperidol, monitor ECG. Droperidol use has been associated with QT_C prolongation, torsades de pointes, and sudden death.

Newer antipsychotic medications

- Risperidone, olanzapine, and quetiapine have been increasingly used to treat delirium, in part because of their more tolerable side effect profile.
- Randomized, double-blind, placebo-controlled trials of these medications in patients with delirium are not yet available.

2. Other Interventions for Delirium Caused by Specific Etiologies

Benzodiazepines

- Benzodiazepines as monotherapy are generally reserved for patients with delirium caused by seizures or withdrawal from alcohol/sedative-hypnotics.
- Benzodiazepines such as lorazepam that are relatively short acting and have no active metabolites may be preferable.
- The combination of a benzodiazepine with an antipsychotic may be a consideration for patients who can tolerate only lower doses of antipsychotic medications or who have prominent anxiety or agitation.
- Combined treatment can be initiated with 3 mg i.v. of haloperidol followed immediately by 0.5 to 1.0 mg i.v. of lorazepam.

2. Other Interventions for Delirium Caused by Specific Etiologies *(continued)*

Cholinergics
Cholinergic medications, such as physostigmine and tacrine, may be useful in delirium caused by anticholinergic agents.

Paralysis and ventilation
Agitated patients whose delirium is caused by severe hypercatabolic conditions such as hyperdynamic heart failure, adult respiratory distress syndrome, or hyperthyroid storm may require paralysis and mechanical ventilation.

Opioids
For patients with delirium in whom pain is an aggravating factor, palliative treatment with an opiate should be considered.

Vitamins
Patients with delirium at risk for B vitamin deficiency, such as alcoholic or malnourished patients, should be given multivitamin replacement.

Electroconvulsive therapy (ECT)
ECT may be a consideration in some cases of delirium caused by neuroleptic malignant syndrome. The potential benefit of ECT should be weighed against the risks of such a procedure in patients who are often medically unstable.