



Recognition and Management of Delirium in the Emergency Department

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A 60-year-old woman is brought to the ED by her husband because she has had an abrupt change in her personality. The husband reports the patient is forgetful, confused, somnolent, withdrawn and has paranoid ideation. She has known metastatic breast cancer and is receiving chemotherapy.

On physical examination the patient is confused, lethargic and alternatively somnolent and agitated. She is oriented only to person. Her vital signs were normal except for a pulse oximetry reading of 95% on room air. She appeared dehydrated and did not interact with the examiner or her family. She was pale and slightly icteric. The mastectomy was well healed. Her liver was enlarged, hard and irregular. On neurological examination she had no focal deficits but she had snout and suck reflexes.

Key Clinical Questions

What is the working diagnosis here? What are the major differential diagnostic possibilities?

What other information would you need to make a definitive diagnosis?

What is the significance to the patient who has the diagnosis of delirium made in terms of underlying disease process, morbidity and mortality?

Key Learning Points

- In any patient with a change in mental status consider:
 - Delirium
 - Structural CNS process
 - Nonconvulsive status epilepticus
 - Psychiatric illness
- Consider aberrant mental state to be acute until proven otherwise
- Delirium is very common in the ED and is often missed
- Missing delirium can result in loss of a window of opportunity to diagnosis and treat reversible toxi-metabolic disturbances, infections, and other major medical and surgical conditions that can present as delirium

Introduction

When faced with a patient who is presenting with a change in mental status, what we are seeing is the neuro-psychiatric resultant of a number of complex processes both acute and chronic. These include the patient's premorbid cognitive ability and personality and the presence of underlying chronic psychosis and dementia. Often the history is vague so that we do not really have a clear picture of the patient's base line neuro-psychiatric functioning. In these cases we must assume that the abnormalities are acute and thus potentially reversible. What this approach boils down to in a practical sense is that if there is no history to the contrary these presumed acute changes in mental status represent either delirium, an acute central nervous system structural insult, nonconvulsive status epilepticus or an acute psychotic reaction. If we obtain an accurate history of chronic neuro-psychiatric dysfunction with acute deterioration of function, the differential diagnosis remains the same. However, the return to base-line mental status would leave us with the preexisting abnormal mental picture.

Since delirium and structural central nervous system insults are unstable conditions that will usually progress without specific interventions, recognition and rapid differentiation of these conditions in the ED is mandatory.

Delirium Defined

The American Psychiatric Association defines delirium (DSM IV 1994) as consisting of 3 broad categories of impairment, viz. an acute and fluctuating onset, disturbance of consciousness and deterioration of cognition. Disturbances of consciousness include disorientation, lethargy, a clouded sensorium and inattention to and relations with the environment in which the patient resides. Cognitive changes may consist of disturbances in memory, language and perception. Inherent in this definition is the lack of permanent structural changes in the central nervous system and thus the inherent potential for reversibility of this condition.

Clinical observations have documented¹ that there are 3 subtypes of delirious patients. The most common type is the apathetic withdrawn seemingly depressed patient. This contrasts with the patients who have agitated delirium. This latter group is typified by patients with delirium tremens who may be febrile, agitated, combative and have sympathetic autonomic hyperactivity. Finally there are some patients who fluctuate in their clinical picture from apathetic to agitated states.

Over the years there have been a number of different names given to the syndrome of delirium. These include acute confusional state, toxic psychosis, delirium tremens, metabolic encephalopathy and acute brain syndrome.

Epidemiology

Delirium is very common in older patients seeking care in the ED. Approximately² 25% have delirium and 50% have dementia. Retrospectively, 25-50% of the delirious patients had been sent home without adequate work up during their ED visit. Naughton³ in 1995 found that 40% of his adult patients had an altered mental status with delirium present in 8.5%. Hustey⁴ found that 26% of his elderly subjects had an altered mental status and 10% of patients had delirium. In 70% of patients with a cognitive impairment, no evidence was available in the charts to show that the abnormal mental state was chronic. The prevalence of delirium in hospitalized patients ranges between 10-40%.^{5,6,7,8} “As many as 25% of hospitalized cancer patients and 30-40% of hospitalized AIDS patients develop delirium. Delirium in the medically ill patient is associated with an increased hospital stay and mortality.⁹ Elderly hospitalized patients who develop delirium have a mortality of 22-76%.¹⁰

Consequences of Missing Delirium in the ED¹¹

There may be a window of opportunity to discover a systemic illness in delirious patients who will respond to treatment early into their illness but who go untreated until the disease process is overt, advanced and potentially untreatable. When we do not recognize the delirious patient, we are prone to treat the patient for other disease entities inappropriately. The delirious patient is often unable to give a cogent history, cannot comply with discharge instructions and is prone to falls.

Etiology and Pathophysiology

Engel and Romano in 1959¹² showed that delirium was associated with reversible EEG changes and considered that the syndrome was a state of “acute cerebral insufficiency” They compared this to acute renal failure. In both conditions there are external perturbations of the milieu interior which impact on the cellular functions of the organ. When these noxious elements are removed the organs resume their prior level of functions. Kety showed in 1960 that with the onset of the delirium there was slowing of the EEG and a reduction in oxygen extraction by the brain.

There are an almost infinite number of possible noxious elements and toxic-metabolic abnormalities that can assault the CNS causing delirium. In addition, delirium can be associated with sleep and sensory deprivation and with withdrawal of a host of sedative-hypnotic drugs. Thus a unifying etiologic explanation that encompasses and explains delirium associated all of these perturbations is unlikely except on basic cellular level. Regrettably, the pathophysiology of delirium has not as yet been elucidated at the molecular level.

The patients presenting with delirium consistently have prominent deficits in memory and emotional disturbances. These functions among many others are primarily subserved by the limbic system of the cortex. This system consists of the hippocampus, the cingulate gyrus, the fornix, the mamillary bodies of the hypothalamus, the amygdala, the anterior nuclei of the thalamus and their interconnections.

Memory is best thought of as consisting of three compartments viz. instant recall, recent memory and remote memory. Remote memory is thought to require protein synthesis in order to store the memory trace. Remote memory is diffusely stored in many areas of the cortex and is thought to be over represented (redundant) in the brain so that remote memory deficits usually associate with significant neuronal dysfunction or loss. On the other hand, new memory traces are thought to be temporarily stored in the limbic system by electrical circuitry. Instant recall functions are unfortunately limited to perhaps 8-10 bits of information. Since the complex activities of daily living require much more information, bits of stored information is constantly being brought up into the instant recall pool, while other bits of information are transferred from instant recall pool back to storage. This processing of information requires energy, switching and coordination of complex processing. This helps to explain why instant and recent memory is so vulnerable to the perturbations seen with delirium.

Specific Causes of Delirium

By far, the most common presentation of delirium is the elderly patient with an acute medical or surgical emergency. In this group there is often a preexisting overt or latent dementia as the predisposing cerebral substrate. These patients usually present with the lethargic or hypoactive subtype and thus may not be recognized as being delirious unless there is a history of an acute change in sensorium or the emergency physician is astute enough to do a brief bedside neuropsychiatric evaluation. In addition, any major illness can be associated with delirium in previously normal individuals of any age.

In addition, toxi-metabolic disturbances and drug related effects are frequently seen causes of delirium in emergency departments. The elderly are particularly sensitive to the central anticholinergic effects of medications. While some medications such as dimenhydrinate and amitriptyline are known to have prominent anticholinergic effects others in common use in the elderly are often over looked. Medications in this latter group include digoxin, furosemide, warfarin, prednisolone and cimetidine. The delirium in these patients may fluctuate for apparent or inapparent reasons. This mental disturbance can progress to stupor and coma. However, more frequently these patients transiently become more lucid and then return to their withdrawn state.

The agitated hyperactive delirium is less common and frequently is associated with drug or alcohol withdrawal or intoxication with psychoactive recreational drugs or medications. These patients are more likely to present with fever, hypertension, tachycardia, tremor and seizures.

Clinical Evaluation

Patients with quiet or hypoactive delirium usually present with a medical or surgical chief complaint and are found by the physician to have a delirium or they are brought in by their family specifically for the changed mental state.

Often they will have abnormal vital signs at triage. Because they have a delirium it will be almost impossible to obtain a meaningful history from the patient. This may be the first clue to the delirium. Since any medical condition can cause this syndrome a complete history, including medications used by the patient should be obtained from the family or caregiver. Then a

complete general physical examination is indicated. Overt and subtle signs and symptoms of infection, liver, kidney and heart failure should be sought.

The neurological evaluation should be broad enough to assess the patient for meningitis, and the focality associated with stroke and intracranial hemorrhage. Toxic-metabolic disturbances are often associated with tremor, myoclonic jerking and asterixis. They may also have frontal release signs such as snout or suck reflexes. These latter signs are helpful in pointing to the diagnosis of delirium but are nonspecific and seen with the dementias and other neurological diseases.

The psychiatric evaluation is key to the diagnosis. The patients will usually be disoriented as to date and place. Their remote as well as recent and instant memory is impaired. This evaluation is difficult because these patients are inattentive and may drift off and fall asleep or answer questions with single word answers. Some patients are hypervigilant and have paranoid ideation and visual or less frequently auditory hallucinations. They have deficits in language perception and expression and may have dysarthria. Neuro-psychiatric testing at the bedside will be discussed in the next section.

Diagnostic Testing

Routine metabolic panels are essential to evaluate renal function, electrolyte concentration and liver functions. Arterial blood gases with lactate level are needed to evaluate ventilation, oxygenation and anaerobic metabolism. Serum drug levels and toxicological studies are indicated in some circumstances. Most patients will require a “fever work up”.

Simple tests of memory will often suffice. Thus, the serial sevens or serial threes tests will assess instant memory and the 3 objects in 3 minutes will test recent memory. Remote memory can be tested by asking the patient about personal events in the remote past that are verifiable, such as their birth dates or birth dates of their children.

A more organized and validated approach to neuro-psychiatric testing is available at the bedside. The initial test may be the Folstein¹³ Mini Mental Status examination. (See appendix) This consists of a series of cognitive tests that evaluate the patient for orientation, language, instant and recent memory and constructional apraxia. This is a simple instrument that takes about 10 minutes to apply and can be administered by nursing and other non-provider personnel. However, test results depend on the patient’s cooperation and abnormal test results are not specific for delirium. An abnormal mini mental status test indicates cognitive impairment seen with any number of acute and chronic CNS conditions.

To complement the mini mental status examination one should administer a test specifically designed to evaluate a patient for this condition. There is a few such tests in common clinical usage. The Confusion Assessment Method, CAM test¹⁴, is one such instrument, (see appendix). A positive CAM score adds to the likelihood that this is an acute and fluctuating deterioration in mental status and thus supports a diagnosis of delirium more than a diagnosis of dementia. However, we are not convinced that any of the tests can or will be sensitive and specific enough to rule delirium in or out and the diagnosis will be best made on the best clinical data available.

Neuroimaging will be necessary in many of these patients to help evaluate patients for a structural CNS lesion. An EEG will sometimes be helpful in the differential diagnosis of nonconvulsive status epilepticus. The EEG is slow in delirium without focality and normalizes when the patient returns to their premorbid state. Patients with agitated delirium may have rapid activity.

Differential Diagnosis

The differential diagnosis of the patient with delirium includes dementia, structural CNS processes, nonconvulsive status epilepticus and acute psychotic illnesses.¹⁵ To make matters more difficult, dementia, nonconvulsive status and CNS disease may also be associated with delirium as a secondary phenomenon. Depressed patients should have normal results of mini mental status and CAM testing unless they have a concomitant dementia or delirium.

Dementia is a relentless disease with progressive loss of cognitive function. However, the rate of progression is variable and can be rather sudden as critical masses of compensating neurons are lost. This is characteristic of vascular dementias as well. In addition, demented patients have fluctuating levels of cognition related to environmental cues and perhaps to the spontaneous ebb and flow of chronic delirium. Drug induced delirium in these frail patients is always a consideration. Until they are profoundly demented, patients with dementia will attend to their environment and interact with their visitors and the medical staff. They may be disoriented to time and place yet have some remote memory traces intact. If the onset is rather abrupt there is no simple way to differentiate dementia from delirium and an evaluation for both conditions will be necessary. The evaluation is mainly for structural CNS diseases as well as for treatable causes of dementia and delirium.

Nonconvulsive status can be difficult to detect but should be thought of in patients with a prior history of a convulsive disorder. These patients may have a clouded sensorium or an acute personality change. They can respond dramatically to parenteral benzodiazepines. However, the diagnosis should be made by EEG prior to instituting this therapy if at all possible.

Patients with a CNS infection or structural insult will usually have signs of meningeal irritation or focal deficits on neurological evaluation. Neuroimaging will solve the problem in many cases. Lumbar puncture will be a key diagnostic test in suspected CNS infection and in suspected subarachnoid hemorrhage who have a normal imaging study.

Patients with acute profound depression or psychotic reactions such as fugue states can also be difficult to differentiate from those presenting with delirium. This is one of those difficult areas in which the patient has to be methodically evaluated for delirium and “cleared” before a primary psychiatric diagnosis and referral are made. Much of the work-up will require a medical in-patient admission before the differentiation can be definitively established. Depressed patients can also have delirium so that establishing that severe depression is present and is not adequate to make a single unifying psychiatric diagnosis without further evaluation.

Management^{16, 17}

Since delirium is a reversible syndrome in most patients and is caused by acute medical or surgical illness, the appropriate treatment is to rapidly elucidate these organic factors and ameliorate them. During this diagnostic some patients will be agitated and restless or frankly combative and will require chemical restraints.

There are a number of basic interventions that are helpful in these patients. Sensory deprivation may cause or contribute to delirium. Thus, patients should be encouraged to use their hearing aids and glasses. A moderate amount of social stimulation is also helpful. These patients need time cues to prevent chronobiologic perturbations from causing or aggravating the delirium, the sun-downing phenomenon. Appropriate lighting for the time of day or night and a wall clock are helpful. To overcome the impairment in acute memory functions, it is useful to continually repeat the same orientation information and explanations of the illness.

When pharmacologic management of agitated patients with delirium is necessary, antipsychotic drugs are the most effective agents. When they are compared to a benzodiazepine, they have been consistently more effective. Haloperidol is currently the drug of choice. It is rapidly active via the oral and parenteral routes and has minimal central anticholinergic activity. The acute side effects of this drug are sedation, extrapyramidal symptoms and prolongation of the Q-T interval. Droperidol is another butyrophenones antipsychotic drug. It has been shown to be faster acting than haloperidol. The FDA has had the manufacturer add a “black box” warning concerning^{18, 19} Q-T prolongation and sudden death associated with the use of droperidol. It is as yet unclear that there is a significant difference between the two drugs. However, for this reason, while we await new data, it would appear prudent to avoid using droperidol.

The use of short acting benzodiazepines as the sole agent for agitation is not as useful as a butyrophenone and by blunting the sensorium can prolong the delirium. However in conjunction with haloperidol there is some evidence of enhancement when the drugs are given together. The standard dosing of this intravenous combination is 5 mg of haloperidol and 1 mg of lorazepam. This dosing can be repeated every twenty minutes to achieve the desired effect.

Delirium due to drug withdrawal is treated by titration with intravenous short acting benzodiazepines as the first line medication. There may be unusual situations in which patients who are withdrawing from alcohol and are in delirium tremens need major surgical procedures. In some of these situations intravenous ethanol is used to rapidly arrest the withdrawal syndrome and allow the patient to go to surgery.

Disposition

Most of these patients will require admission to the hospital. A small number of patients, usually those with underlying dementia, will have delirium without a recognizable inciting illness. These patients may have a chronic recurrent delirium superimposed on their dementia. This latter group will actually do worse in the hospital as they lose their familiar environmental and family support systems.

References

1. Roche, V. Etiology and Management of Delirium. *The American Journal of the Medical Sciences* 2003; Volume 325 No. 1.
2. Lewis, LM.; Miller, DK. Unrecognized Delirium in ED Geriatric Patients. *Am J Emergency Medicine* 1995; 13: 142:145.
3. Naughton, et al. Delirium and Other Cognitive Impairments in Adults in the ED 1995. *Annals* 25, No. 6.
4. Hustey. ED Prevalence and Documentation of Impaired Mental Status in Elderly. *Annals* 2002. Vol. 39, No. 3.
5. Lipowski, ZJ; Delirium (acute confusional states). *JAMA* 1987; 258:1789-1792
6. Stiefel, F.; Holland, J.: Delirium in cancer patients. *Int. Psychogeriatr* 1991; 3:333-336
7. Tune LE: Post-operative delirium. *Int Psychogeriatr* 1991; 3:325-332
8. Massie, MJ; Holland, J. Glass E: Delirium in terminally ill cancer patients. *Am J Psychiatry* 1983; 140: 1048-1050
9. Rabins, PV; Folstein, MF: Delirium and dementia: diagnostic criteria and fatality rates. *Br J Psychiatry* 1982; 140: 149-153
10. Weddington, WW: The mortality of delirium: an under-appreciated problem? *Psychosomatics* 1982; 23:1232-1235
11. Sanders. Missed Delirium in Older Emergency Department Patients: A Quality of Care Problem. 2002. *Annals*, Vol. 39, No. 3.
12. Engel, G; Romano, J: Delirium, a syndrome of cerebral insufficiency. *J Chronic Dis* 1959; 9:260-277
13. Folstein, MF, Folstein, SE. Mini Mental Status Examination: A Practical Method for grading cognitive state of patients for the clinical and psychiatric research. *J Psychiatric Research* 1975; 12:189-192.
14. Inouye, S.; Van Dyck, C. Clarifying Confusion: The Confusion Assessment Method. *Annals. Internal Med* 1990. 113:941
15. Williams, Edwin, R.; Shepherd, Suzanne Moore. Psychiatric Emergencies. Medical Clearance of Psychiatric Patients. *Emergency Medicine Clinics of North America*. 2000; Vol. 18 No. 2.

16. American Psychiatric Association. Practice guideline for the treatment of patients with delirium. *Am J Psychiatry* 1999; 156 (suppl): 1-20.
17. American College of Emergency Physicians. Clinical Policy for the initial approach to patients presenting with altered mental status. *Ann Emerg Med* 1999; 33:251-281
18. Horowitz, B.; Bizovi, K.; Moreno, R. Droperidol-Behind the black box warning. *Acad Emerg. Med* 2002; 9:615-617
19. Chase, P.; Biros, M. A retrospective review of the use and safety of droperidol in a large, high-risk, inner-city emergency department patient population. *Acad Emerg Med* 2002; 9:1402-1410

Patient Outcome

The patient was admitted and had a complete metabolic and neurologic work-up. She was found to have been taking MS Contin and using fentanyl patches each prescribed by a different physician. Her liver function had deteriorated since her last visit and it was assumed that her ability to metabolize the opioids had diminished. She responded quite remarkably to naloxone. Her calcium was 10.8 and her head CT was unchanged.

Annotated Bibliography

1. cAllister-Williams R, Ferrier I. Rapid tranquillization: Time for a reappraisal of options for parenteral therapy. Brit J Psych 2002; 180:485-489

This is a review article that tries to give some direction on where to go without droperidol and haloperidol. Neither haloperidol nor droperidol are available on the British market, and this article does a reasonable job reviewing the literature on alternatives. It concludes by recommending benzodiazepines when rapid tranquillization is required pending the availability of newer antipsychotic medications that can be delivered parenterally.

2. Hustey F, Meldon S. The prevalence and documentation of impaired mental status in elderly emergency department patients. Ann Emerg Med 2002; 39:248-253.

This is a prospective, observational study of 297 patients over the age of 70 who were found in the ED to have some degree mental status impairment. The study reports that 26% of the patients had mental status impairment and that 10% had delirium. The authors report that the emergency physician addressed the mental status impairment in only 18% of those patients who were sent home. The authors stress the importance of a systematic assessment of cognitive function and of altered mental status in the elderly presenting to the ED.

3. Naughton B, Moran M, Ghaly Y, Michalakes C. Computed tomography scanning and delirium in elder patients. Acad Emerg Med 1997; 4:1107-1110

This study attempted to examine ordering practices in elder patients with altered mental status. The authors report that in all elder patients with altered mental status, those with delirium are most likely to be scanned however no analysis is provided of the findings of these scans nor of the predictors of a positive scan.

4. American College of Emergency Physicians. Clinical policy for the initial approach to patients presenting with altered mental status. Ann Emerg Med 1999; 33:251-281.

This practice guideline provides a framework to use when evaluating the patient with altered mental status. It emphasizes the historical and physical findings that drive specific actions in evaluating these patients. The clinical policy includes a description of the mini mental status exam, and provides "quick reference" forms that can be used for quality assurance programs and for developing a complaint specific chart.

5. Wofford J, Loehr L, Schwartz E. Acute cognitive impairment in elderly ED patients: Etiologies and outcomes. Am J Emerg Med 1996; 14:649-653.

This is a descriptive study of ED patients with acute cognitive impairment. It reports that 5% of EMS transports are for patients over the age of 60 with an acute change in mental status. The rate of hospitalization was 75% and mortality was 29%. This paper is one of the earlier studies in the EM literature emphasizing the need for aggressive management of the delirious patient, especially if elderly.

6. Lewis L, Miller D, Morley J, et al. Unrecognized delirium in ED geriatric patients. Am J Emerg Med 1995; 13:142-145.

This study is a convenience sample of 385 patients over the age of 65 who were not unconscious and who could speak. Patients were evaluated by a nurse trained in geriatric assessments using the CAM score after the emergency physician had done an initial evaluation. 10% of patients were assessed as having delirium; the emergency physician recognized only 17% of these patients however 62% were admitted to the hospital, usually with a diagnosis of sepsis. 37% of the patients meeting criteria for delirium were discharged from the hospital; 3 month mortality was 14% of those patients diagnosed with delirium using the CAM score vs 8% of those without delirium.

7. American Psychiatric Association. Practice guideline for the treatment of patients with delirium. Am J Psychiatry 1999; 156(suppl): 1-20.

This is an excellent document that provides recommendations on the psychiatric management of patients with acute delirium; environmental interventions; somatic interventions. The experts who wrote this guideline recommended that haloperidol or droperidol be used for the acutely agitated delirious patient while benzodiazepines be used as a monotherapy for delirium caused by withdrawal of alcohol or sedative hypnotics. Interestingly, with the “black box” warning from the FDA, the use of antipsychotics must be readdressed and hopefully the APA is actively working on an updated guideline.

8. Karas S. Behavioral emergencies: Differentiating medical from psychiatric disease. Emerg Med Practice 2002; 4:1-20.

This is an excellent review of the emergency department approach and management of the patient with an acute change in mental status. The discussions are evidence based and the references are annotated. Clinical pathways are provided that visually present how these patients are managed.

Modified Mini-mental Status Exam (used to diagnose cognitive impairment)

5 - Time Orientation - date, day, season

5 - Place Orientation - City, State, Building

5 - Attention - serial 7s

3 - Registration of 3 objects (instant memory)

3 - Recall - 3 objects in 3 minutes (recent memory)

9 - Language - name 2 objects, repeat "no ifs and buts, 3 stage command, write sentence, copy design (23 or less = cognitive abnl.)

Confusion Assessment Method-CAM Score

- Feature 1 - Acute onset and fluctuating course of cognitive/behavioral impairment
- Feature 2 - Inattention (distractibility)
- Feature 3 - Disorganized thinking
- Feature 4 - Altered level of consciousness
Positive test - 1 & 2 + 3 or 4

Questions

- 1. Which of the following is not a characteristic of delirium?**
 - a. Fluctuating course
 - b. Gradual onset
 - c. Inattention
 - d. Altered perception

- 2. Which of the following is a risk factor for delirium?**
 - a. Age over 60
 - b. Dementia
 - c. Polymedication use
 - d. All of the above

- 3. Which finding on physical examination is inconsistent with delirium?**
 - a. Myoclonus
 - b. Tremor
 - c. Asterixis
 - d. Paraparesis

- 4. What is the recommended medication to manage delirium from drug withdrawal?**
 - a. Haloperidol
 - b. Risperidone
 - c. Lorazepam
 - d. Diphenhydramine

Answers

1. Answer b.

Delirium is primarily a disturbance of consciousness, attention, cognition and perception. It can also affect sleep, psychomotor activity and emotions. The inattention that is frequently seen in delirium makes assessing cognitive function difficult. The onset of delirium is characteristically sudden and does not resolve until the underlying process that precipitated the event is treated.

2. Answer d.

Delirium is a medical emergency and its etiology is an underlying medical process. Older age, polymedication use, social isolation, physical stressors such as surgery, and chronic medical conditions are all associated with delirium. Underlying conditions associated with delirium include: central nervous system disorder, metabolic disorders, cardiopulmonary disorders and system illnesses.

3. Answer d.

Focal findings are inconsistent with delirium. Nonspecific signs of a metabolic abnormality such as tremor, myoclonus, asterixis can be seen in patients who have their delirium precipitated by a metabolic abnormality.

4. Answer c.

According to the American Psychiatric Association, delirium from drug withdrawal is best managed with a benzodiazepine as a monotherapy. The best treatment of agitation in delirium from other medical causes is currently controversial due to concerns of QTc prolongation seen with droperidol and with haloperidol.