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Emergency in case of suicidal behavior

Suicide is a major health problem and one of the most common reasons why people present to psychiatric emergency rooms in crisis. In 2006, it was the eleventh leading cause of death in the United States for all age groups (National Institute of Mental Health [NIMH] 2009).

Demographics

Age

The prevalence and lethality of suicide differ across age groups. For example, although suicide attempts are more common for persons ages 15–34 years, the lethality is much higher in the elderly population. Among young adults ages 15–24, suicide is the third leading cause of death, accounting for 12% of all deaths in this group annually, and it is the second leading cause of deaths for adults ages 25–34 years (CDC 2009a).

The strongest risk factors for attempted suicide in the youth population are the presence of depression, alcohol or drug abuse, aggressive or disruptive behaviors, and a previous suicide attempt (American Psychiatric Association 2005). Other risk factors include frequent episodes of running away, incarceration, family loss or instability, significant problems with parents, expressions of suicidal thoughts or talk of death or the afterlife during moments of sadness or boredom, withdrawal from friends and family, difficulty dealing with sexual orientation, diminished interest in enjoyable activities, and unplanned pregnancy.

Risk factors for suicide among persons older than age 65 years differ from those of the rest of the population. In addition to having a higher prevalence of depression, older persons tend to be more socially isolated, make fewer attempts per completed suicide, and use more lethal methods (Goldsmith et al. 2002; NSSP 2009). The most common methods for suicide by older adults include firearms (71%), overdose (11%), and suffocation (11%) (Goldsmith et al. 2002).

Gender

Suicide manifests differently in men and women. In 2004, suicide was the eighth leading cause of death for males and the sixteenth leading cause of death for females. Although women attempt suicide almost two to three times more often than men during their lifetime (Krug et al. 2002), almost four times as many males as females die from completed suicide (NIMH 2009). Although firearms, suffocation, and poisoning are the three most common methods of suicide for both males and females, males most often use firearms (56%), followed by suffocation (23%) and poisoning (13%), whereas females most often use poisoning (40%), followed by firearms (31%) and suffocation (19%).

Risk Factors

Research has clearly identified several risk factors related to suicide.

1. **Demographics.** The major demographic features that are linked to increased risk for suicide are marital status, age, gender, sexual orientation, and race. Men and women who are unmarried (never married, divorced, or widowed) have higher suicide rates than people who are married (American Psychiatric Association 2003).
2. **Psychiatric History.** Approximately 90% of people who have completed suicide have been diagnosed with a major psychiatric disorder (American Psychiatric Association 2003; Arsenault-Lapierre et al. 2004; Harris and Barraclough 1997). People with mood disorders, substance-related disorders, psychotic disorders, and personality disorders were found to have the highest risk for suicide (Arsenault-Lapierre et al. 2004; Moscicki 1999). The majority of completed suicides were by people with mood disorders, especially in the depressive phase.
3. **Psychological and Cognitive Dimensions.** Psychological factors that have been found to

- potentiate suicide risk are anxiety and hopelessness (Fawcett 1999; Jacobs et al. 1999). Fawcett (1999) defined anxiety in the presence of depression as unremitting psychic pain.
4. **Psychosocial Dimensions.** The availability of firearms in combination with a mood disorder and intoxication is an acutely lethal profile (Moscicki 1999). Stressors that have been identified as proximal risk factors include interpersonal loss, relationship conflicts, rejection, legal issues (e.g., incarceration), economic difficulties, and lack of social supports.
 5. **Childhood Trauma.** Patients with a history of childhood trauma (physical and sexual abuse) may develop complex and incapacitating disorders as adults. These disorders include dissociative disorders, personality disorders, eating disorders, substance abuse disorders, and posttraumatic stress disorder (Chu 1999). In addition, these patients may express symptoms of severe impulsivity, mood lability, and self-injurious behaviors (Mann et al. 1999).
 6. **Family History.** Environmental factors that are most likely to be associated with suicide risk are parental separation or divorce, parental legal problems, child abuse and neglect, and a family history of mental illness and/or substance abuse (Jacobs et al. 1999).
 7. **Physical Illness.** The following physical illnesses and conditions are associated with an increased risk of suicide: malignant neoplasms, ulcer, lung disorders (especially asthma and chronic obstructive pulmonary disease), HIV/AIDS, Huntington's disease, brain injury, multiple sclerosis, lupus erythematosus, renal hemodialysis, and seizure disorders (Harris and Barraclough 1997; Jacobs et al. 1999)

Assessment

The depth and breadth of information obtained from a psychiatric evaluation will vary with the setting, the patient's ability or willingness to provide information, and the availability of information from collateral sources. Sources of collateral information that may be helpful include the patient's family members and friends, physicians, other medical or mental health professionals, teachers or school personnel, colleagues or coworkers, and staff from supervised housing programs where the patient may reside mental state, activities, and psychosocial stressors.

A thorough psychiatric evaluation is essential to the suicide assessment process. Information regarding the patient's psychiatric and medical history, current circumstances, and mental state must be obtained during this evaluation and used by the clinician to

- a) identify specific factors and features that may increase or decrease the risk of suicide or suicidal behaviors and that may be amenable to acute and ongoing interventions,
- b) address the patient's immediate safety and determine the most appropriate treatment setting, and
- c) develop a multiaxial differential diagnosis that can help guide the next step of treatment (Jacobs et al. 2003).

When evaluating a suicidal patient, the clinician should attempt to identify:

1. Psychiatric Signs and Symptoms
2. Past Suicidal Behavior
3. Past Psychiatric and Medical History
4. Family Psychiatric History
5. Current Psychosocial Stressors and Function
6. Psychological Strengths and Vulnerabilities
7. Suicide Inquiry: Suicidal Ideation and Suicidal Intent, Suicidal Plan and Suicidal Behavior, Suicidal History.

Psychiatric Management of Suicidal Behaviors

According to the "Practice Guideline for the Assessment and Treatment of Patients With Suicidal Behaviors" (American Psychiatric Association 2003), "Psychiatric management includes establishing and maintaining a therapeutic alliance; attending to the patient's safety; and determining the patient's psychiatric status, level of functioning, and clinical needs to arrive at a plan and setting for treatment". Once the initial evaluation is complete and the treatment plan has been determined,

additional goals of psychiatric management may be applied in the emergency setting; these include crisis intervention, facilitating treatment adherence, and providing education to the patient and family members.

Table 1. Guidelines for selecting a treatment setting for patients at risk for suicide or suicidal behaviors

Admission generally indicated

After a suicide attempt or aborted suicide attempt if:

- Patient is psychotic
- Attempt was violent, near-lethal, or premeditated
- Precautions were taken to avoid rescue or discovery
- Persistent plan and/or intent is present
- Distress is increased or patient regrets surviving
- Patient is male, older than age 45 years, especially with new onset of psychiatric illness or suicidal

thinking

- Patient has limited family and/or social support, including lack of stable living situation
- Current impulsive behavior, severe agitation, poor judgment, or refusal of help is evident
- Patient has change in mental status with a metabolic, toxic, infectious, or other etiology requiring

further workup in a structured setting

In the presence of suicidal ideation with:

- Specific plan with high lethality
- High suicidal intent

Admission may be necessary

After a suicide attempt or aborted suicide attempt, except in circumstances for which admission is generally indicated

In the presence of suicidal ideation with:

- Psychosis
- Major psychiatric disorder
- Past attempts, particularly if medically serious
- Possibly contributing medical condition (e.g., acute neurological disorder, cancer, infection)
- Lack of response to or inability to cooperate with partial hospital or outpatient treatment
- Need for supervised setting for medication trial or electroconvulsive therapy

Providing Treatment

Psychopharmacological interventions that modify risk factors may be helpful in preventing suicide. Medications can be lifesaving not only in the long term, but also in the short term, such as in the treatment of severe acute anxiety in a depressed patient. In the emergency setting, medications can provide significant immediate relief, but have time-limited effects that require close supervision of the patient's mental status, because the effects of the medications can wear off and symptoms may reemerge, with subsequent recurrence of suicidal impulses.

- Antidepressants - the American Psychiatric Association's (2003) practice guideline suggests that a strong association exists between clinical depression and suicide, and that the reasonable effectiveness and safety of antidepressants support their use.

- Benzodiazepines - Clinical evidence suggests that aggressive treatment of panic, anxiety, and agitation with benzodiazepines or other anxiolytic agents may reduce suicidal risk.

- Anticonvulsants - Anticonvulsant medications have been used to reduce agitation in a whole host of psychiatric conditions.

- Atypical Neuroleptics - Atypical neuroleptics, such as olanzapine and quetiapine, seem to produce anxiolytic and antiagitation effects in some patients and may play a role in reducing suicide risk. In the psychiatric emergency setting, neuroleptics are used primarily to reduce aggression and agitation.

CONCLUSIONS:

Suicide is a major health problem and one of the most common reasons why people present to psychiatry emergency rooms in crisis. More than 33,000 completed suicides occur in the world each year, which is equivalent to 91 suicides per day or 1 suicide every 16 minutes. Although only a small minority of suicide attempts end up in death, each attempt increases the risk of death, serious long-term physical injury, and psychological suffering. The prevalence and lethality of suicide differ across age groups, gender, and race/ethnicity.

Research has clearly identified several risk factors related to suicide. The major demographic features linked to increased risk for suicide are marital state, age, gender, sexual orientation, and race/ethnicity. Approximately 90% of people who have completed suicide have been diagnosed with a major psychiatric disorder. Psychological factors found to potentiate suicide risk are anxiety and hopelessness. Other important risk factors to ask about include access to firearms, childhood trauma, family history, and physical illness.

The depth and breadth of information obtained from a psychiatric evaluation will vary with the setting, the patient's ability or willingness to provide information, and the availability of information from collateral sources. A thorough psychiatric evaluation is essential to the suicide assessment. Information regarding the patient's psychiatric and medical history, current circumstances, and mental state must be obtained during this evaluation. Two important predictors of suicide are current suicidal ideation and history of suicide attempts. A comprehensive suicide inquiry should include assessment of suicidal ideation, suicide intent, a suicide plan, suicidal behavior, and suicide history.

Psychiatric management of suicidal behaviors includes establishing and maintaining therapeutic alliance, attending to the patient's safety, and determining the patient's psychiatric status, level of function, and clinical needs to arrive at a plan and setting for treatment.

Emergency in case of depressed mood states

General Approach to Mood States

Mood disturbance is a common presenting symptom or complaint for patients in a psychiatric emergency service (PES). When patients are cooperative, the assessment can be straightforward. However, angry, irritable, and euphoric patients may be agitated or potentially violent and unable to tolerate a lengthy interview. Patients with labile affect can be unpredictable and perplexing to an inexperienced interviewer. Patients who are profoundly depressed may be withdrawn and slow to reply, making it difficult to obtain full information. Accurate assessment of patients with abnormal mood is critical, because they are at increased risk for suicide, violence, and significant morbidity. In this chapter, we focus on the challenges of assessing and managing patients with extreme mood disturbances, specifically depression, mania, and anger.

Depressed Mood States

Depression is the third most common presenting symptom of patients in the psychiatric emergency settings (PES), after substance use and psychotic disorders (Currier and Allen 2003). Indeed, major depressive disorder is very common and may affect up to 25% of individuals in their lifetime (Goldstein and Levitt 2006), although the majority will never be seen in the PES. Patients who are seen in a PES or general medical emergency department for a psychiatric assessment following a suicide attempt should always be carefully screened for depression and other mood disorders. In turn, suicide risk should be evaluated in all patients presenting with depressed mood.

Assessment

Many patients with depressed mood will readily admit their distress. Rather than asking closed-ended questions, the clinician should ask open-ended questions, which often yield more accurate information. For example, instead of asking, “Would you say you have been sad and tearful more often than not for the past 2 weeks?” you might say, “How has your mood been lately?” Symptoms of sadness and/or anhedonia are essential for the diagnosis of a major depressive episode. Other symptoms associated with depressive episodes include sleep disturbance, diminished energy, appetite changes, significant guilt or self-blame, impaired concentration, psychomotor retardation, and preoccupation with death or suicide. Additionally, a depressive episode can be diagnosed only if the period of depression includes a significant change in the patient’s level of functioning in comparison with the patient’s baseline.

The clinician should ask about major stresses and significant losses as part of the history of the presenting illness (see Table 5–1). These stresses and losses may trigger a depressive episode. A diagnosis of an adjustment disorder should also be considered if the mood symptoms begin after a significant stress.

Some patients may minimize their symptoms of depression for cultural reasons or fears of stigma and discrimination. These patients may have decided to die by suicide and may deny depressed mood in order to carry out their plans. Asking about past episodes of mood disturbances is important. Past diagnosis, treatment, and follow-up help put the current presentation in context.

The mental status examination of a patient with depression will often reflect the depth of his or her distress. Hygiene, eye contact, speech, and thought content are salient elements. With respect to thought content, mood-congruent themes of worthlessness, poverty, or nihilism signal severe depression, and may at times reach delusional intensity. Psychotic symptoms are present in 15% of all depressed patients (Glick 2002). In adolescents, psychotic depression may be the first sign of bipolar disorder (Schatzberg and Rothschild 1992). Agitated depression can be difficult to differentiate from a

mixed state.

Diagnosis

A depressed mood can be part of many psychiatric disorders. The most common diagnosis associated with depressed mood is major depressive episode, which should be considered first. If the patient's symptoms do not meet full criteria for major depressive episode, the clinician should consider adjustment disorder or bereavement. If the patient is psychotic and depressed, the clinician should consider a diagnosis of major depressive episode, severe, with psychotic features. Depressive episodes, with or without psychosis, can also occur in patients with bipolar disorder, schizophrenia, schizoaffective disorder, or other psychotic disorders. If the patient is actively using a mood-altering substance, substance-induced mood disorder needs to be high on the differential. Alcohol and opioid misuse are frequently associated with depressed mood. Many patients may have more than one diagnosis. For example, high comorbidity exists between anxiety disorders and depressive symptoms. Patients with borderline personality disorder may complain of depressed or rapidly changing mood, in addition to unstable interpersonal relationships and selfimage.

Management and Disposition

Disposition of patients is determined by the risk assessment. Patients with depressed mood and significant suicidal ideation and/or psychosis generally require hospital admission. Additional factors that may heighten the need for hospital admission include the presence of a disabling medical condition, social isolation, lack of community supports, a hostile home environment, or no follow-up care. In fact, over half of all patients seen in the PES with depressive symptoms may require admission (Harman et al. 2004).

Patients with a major depressive episode who will not be admitted to a hospital can be started on antidepressants in the emergency department (Milner et al. 1999). When prescribing an antidepressant, the clinician needs to carefully explain the purpose of the medication, describe common adverse reactions, and discuss the expected time course for symptom improvement.

Patients must have follow-up with a healthcare provider who can monitor their response to the antidepressant and continue the prescription (Glick 2004; Shea 1998). If possible, the patient's family or support person should be included in the discussion.

The choice of an antidepressant agent rests on past response (of the patient or family members), side effects, and known contraindications. Across the lifespan, the selective serotonin reuptake inhibitors (SSRIs) are commonly used as first-line therapy (Sadock and Sadock 2007). Mood improvement typically occurs after 4–6 weeks of therapy, but neurovegetative symptoms may begin to improve in as little as 1–2 weeks. Patients will need to continue antidepressants beyond their return to euthymia. Common side effects include gastric discomfort, insomnia, jitteriness (in up to 25% of patients), and sexual disturbance (in 50%–80% of patients) (Sadock and Sadock 2007).

The starting dose should be reduced in the elderly and in patients with liver disease. In the child and adolescent population, the clinician should carefully weigh the risks and benefits of SSRIs because they may increase suicidal ideation (Bailly 2008). SSRIs are generally considered safe in pregnancy; studies have shown that the risk of congenital cardiac malformations in fetuses exposed to SSRIs does not exceed 2%, although paroxetine is associated with a higher risk compared with other SSRIs (Greene 2007).

Benzodiazepines or low-dose atypical antipsychotics are often prescribed for the insomnia and anxiety associated with depression. Patients should be cautioned about the risk of tolerance, which can occur quite readily with benzodiazepines (Glick 2002).

For a patient with a history of bipolar disorder, mania, or hypomania, antidepressants should not be prescribed alone. A mood stabilizer should be ordered concurrently (Sadock and Sadock 2007). The first-line mood stabilizers in bipolar depression are lithium and lamotrigine. Quetiapine has also shown significant benefit (El-Mallakh and Karipott 2006). If psychosis is present, typical or atypical

antipsychotics can be used in conjunction with antidepressants (Glick 2002).

For patients with mild to moderate depression, a course of brief, structured psychotherapy can be recommended in combination with pharmacotherapy or as an alternative to antidepressants. Patients with bereavement or adjustment disorder may benefit more from supportive counseling than from an antidepressant. In patients with borderline personality disorder, dialectical behavior therapy has been proved effective for reducing self-harm behaviors and attenuating mood lability (Sadock and Sadock 2007). Patients and family members benefit from learning about the symptoms and treatment of depression.

Emergency in case of elevated mood states

Assessment

Assessing a patient with an elevated mood draws on an interviewer's flexibility, creativity, and patience. As in interviews with depressed patients, safety concerns are a priority. The clinician should consider having security staff present, because even the most euphoric and elated patient can quickly become irritable and uncooperative. Considerable interviewing skill is necessary to interject questions about symptoms consistent with mania that lead to useful information yet avoid causing irritability or excessively lengthy responses (Levinson and Young 2006). Asking questions that are short, closed ended, and focused will increase the amount of useful information from patients who are very talkative, circumstantial, or disorganized. To obtain the history of presenting illness, the clinician should ask questions to elicit a clear timeline of recent events and explore recent stresses. The interview should end before the patient escalates, regardless of how little factual information has been obtained. Even a short encounter provides plenty of data for the mental status examination. Information about the longitudinal pattern of mood disturbance is necessary to determine the diagnosis. Often, this information is easier to obtain from collateral sources.

Symptoms particular to mania that often emerge spontaneously in the interview include grandiosity, decreased need for sleep, increased talkativeness, indulgence in pleasurable or high-risk activities, increased goal-directed activity, flight of ideas, and distractibility. It is important to explore suicidal and homicidal ideation, because manic patients often feel invincible and may lose all sense of mortality or morals. Also, manic patients often engage in behaviors that will inadvertently put them at risk for trauma or neglect (Swann 2003).

The clinician should inquire about antidepressant use as a precipitant of a manic state (Sadock and Sadock 2007). Poor compliance with prescribed medications can also contribute to a patient's presentation. Exploring the recent use of substances is important, because substance misuse can mimic or mask a manic episode.

Many patients with mania have excessive motor activity and may be unable to sit down for more than a few seconds. The mental status examination may also reveal hypervigilance, irritability, labile affect, flight of ideas, circumstantiality, tangentiality, delusions, hallucinations, pressured speech, lack of insight, and impaired judgment.

Although patients may not cooperate with a physical examination, it should be attempted, because a number of medical diagnoses are associated with euphoric or elevated mood (see Table 5–6). Brief observation of the patient can suggest substance intoxication or withdrawal. Basic investigations are recommended. Beta-human chorionic gonadotropin testing is warranted in women of childbearing age, because many mood stabilizers are teratogenic (James et al. 2007).

Diagnosis

The key feature of bipolar I disorder is one or more manic or mixed episodes (with or without

depressive episodes), whereas bipolar II disorder is associated with hypomanic states. In hypomania, the patient has an elevated, euphoric, or irritable mood but is not psychotic and does not require hospitalization. In mania, the patient has a clear loss of social or occupational functioning, whereas a patient in hypomania usually completes responsibilities despite having a different level of functioning. In a mixed state, features of both depression and mania are present, although a broad range of clinical presentations is seen. Patients with mixed states often demonstrate mood lability and severe agitation, which can make them unpredictable and difficult to manage (Swann 2008).

Manic episodes occur in a smaller number of disorders than depressive episodes. Although most commonly associated with bipolar I disorder, periods of elevated mood also occur in schizoaffective disorder and substance-related disorders. Schizoaffective disorder requires the longitudinal predominance of mood symptoms, as well as a 2-week period of psychotic symptoms in the absence of mood symptoms. Substances associated with a euphoric mood include alcohol, amphetamine, cocaine, hallucinogens, and opioids. The state of mania is associated with disinhibition, which increases the risk of substance use. Mania is also associated with medical conditions (see Table 5–6) and can be induced by an antidepressant.

Management and Disposition

Patients in a manic state or mixed state usually have little or no insight into their potentially harmful ideas and plans. They need to be involuntarily admitted to the hospital. Patients with more insight and less severe mood disturbance (e.g., hypomania) may be managed in the community with medication adjustment and close follow-up.

In the emergency setting, patients in a manic state are often irritable, agitated, and intrusive. Staff should try to decrease environmental noise and unpredictability, and offer consistent low-key interpersonal interactions (Swann 2008). Seclusion or restraints may be necessary to contain an agitated patient or prevent harm to others. If a patient will remain in the PES for an extended period, medications should be offered proactively to prevent a reescalation of the manic behaviors.

Atypical antipsychotics are first-line agents to control manic agitation. They have the same antimanic effects as typical antipsychotics and a lower risk of akathisia and extrapyramidal symptoms (Sadock and Sadock 2007; Swann 2003). Risperidone, olanzapine, ziprasidone, quetiapine, and aripiprazole are available in different forms (tablet, soluble, or intramuscular).

Benzodiazepines can be used alone or in conjunction with antipsychotics, with the aim of controlling agitation. Caution should be taken when using benzodiazepines in elderly patients due to increased risk of falls. The clinician should keep in mind that the patient may be too agitated and/or incapable of consenting to treatment, and that initially such interventions constitute chemical restraint.

If hospitalization is not required, once the patient is calm, informed consent can be obtained from the patient or a substitute decision maker regarding maintenance therapy. Mood stabilizers are not typically initiated in the PES, unless noncompliance has been identified and the objective of the emergency department visit is simply to reinstate the patient's usual mood stabilizer. Valproate loading can be attempted (Swann 2003, 2008). Antipsychotics are preferable to mood stabilizers if there are concerns about teratogenicity, although the several risks, such as extrapyramidal symptoms, must be carefully weighed against the benefits (Patton et al. 2002).

Emergency in case of irritability and angry

Assessment

Interviews in the PES to assess angry and irritable patients usually fall into one of two categories: the assessment of a reasonably calm person who was brought in because of angry and irritable

behavior in the community or the assessment of a person who is angry at the time of the interview.

As with all other patients in the PES, the assessment of a patient who has a history of angry episodes or is currently angry begins with ensuring everyone's safety and is initially guided by the patient's ability to cooperate. With patients who are reasonably calm and can describe their episodes of anger and irritability, the interviewer can gather specific details about the incident that precipitated the visit as well as about previous episodes of anger. The interviewer should ask open-ended and unbiased questions—for example, "How many times did you hit John?" rather than "Did you hit him a lot of times?" (the latter question allows patients to minimize their aggressive behavior, especially if facing arrest for their actions). Once the history of the presenting illness has been explored, the interviewer can direct questions to ruling in or out specific diagnoses.

Assessment of patients who are angry and irritable during the interview presents special challenges. Clinicians need to be aware of their own discomfort with angry patients and avoid revealing any irritability of their own. Setting firm limits may be necessary. Trying to empathize with the patient can help to establish an alliance and enable the patient to feel understood. This does not mean that the clinician must agree with the patient's ideas or beliefs, but initially offering a rational response to a patient who is angry is unlikely to be helpful. The clinician should allow the angry patient to feel heard, to be supported, and to have his or her feelings validated.

Diagnosis

Angry and irritable behaviors are associated with many diagnostic categories, including mood disorders. People experiencing a depressive episode may present with irritability. This tends to be more common in males, possibly because the culture discourages men from admitting to depression. Some authors have described a "male depressive syndrome," characterized by low impulse control, episodes of anger, and high irritability (Rutz et al. 1995; Winkler et al. 2005). Patients experiencing a manic or mixed episode can often be angry and irritable, rather than euphoric.

Patients with paranoid ideation and other psychotic symptoms can become very angry because they perceive that no one understands their fears of danger. Also, because of the high prevalence rates of substance abuse and dependence seen in patients in a PES, it is important to consider that patients may be intoxicated with alcohol or stimulants. Patients who are in withdrawal may become very irritable and may present to the PES seeking benzodiazepines, opioids, or other prescription medications.

Many other diagnostic categories can also be associated with anger and irritability. The family and friends of patients with borderline or antisocial personality disorders may be more concerned with their outbursts of extreme and inappropriate anger than are the patients themselves. Borderline personality disorder should be suspected in patients with a pattern of instability in interpersonal relationships and self-image, rapidly fluctuating moods, and self-harm behaviors. Core features in conduct disorder and antisocial personality disorder are verbal and physical aggression, as well as a disregard for the rights of others.

In children and adolescents, oppositional defiant disorder is associated with hostile, disobedient, and defiant behavior but not with a disregard for the rights of others. Poor impulse control is a core symptom in ADHD. In up to 50% of patients, this disorder can persist into adulthood (Sadock and Sadock 2007). ADHD is frequently comorbid with Tourette's syndrome, a condition characterized by motor and vocal tics and episodic rage attacks.

Medical causes for angry outbursts should also be considered. These include dementia, delirium, a history of head injury, and seizure disorders.

It is important to remember that anger is a normal reaction to many circumstances. Anger is common in sudden losses, unexpected death of a loved one, theft, devastating medical diagnosis, discovery of betrayal, or other crisis. Anger can also be experienced during a disaster. If the anger is situational, interviewing family members may quickly reveal their role in contributing to a patient's angry outbursts.

Intermittent explosive disorder is diagnosed in the absence of other disorders. It is more common

in men. Key features include extreme expressions of anger, often to the point of uncontrollable rage, that are disproportionate to the situation at hand. The patient also exhibits genuine remorse afterward and a pleasant demeanor between outbursts.

Management and Disposition

Management of the angry patient depends on the diagnosis. Medication may have a role in the management of angry outbursts if a psychiatric disorder is present. However, any medication needs to be prescribed with a clear plan for follow-up to ensure careful evaluation of any benefit (Sadock and Sadock 2007). Hospitalization should be considered for those patients with a psychiatric disorder whose anger presents a risk of injury to the patient or to others.

Some patients who are in control of their mood state may benefit from anger management training. This training is usually delivered in a group setting and helps patients learn strategies to modulate their angry outbursts, appropriately assert their needs, and develop constructive conflict resolution strategies. The clinician must carefully document the risk assessment of a nonpsychotic angry patient. It is imperative to remind patients that they are responsible for their actions and the consequences of their actions when angry. This should be documented carefully.

Hospitalization or other psychiatric treatment for anger in the absence of a psychiatric disorder is generally not indicated. The most appropriate action may be to release these angry individuals to the custody of law enforcement. Careful documentation of the decision-making process in determining disposition for an angry patient is important for medicolegal purposes.

Key Clinical Points

- In assessing patients with extreme moods, the interviewer should always address safety and risk issues first.
- Angry and depressed mood states occur in a wide range of psychiatric disorders.
- Obtaining a longitudinal history of mood states is important in establishing a mood disorder diagnosis.
- The clinician should screen a patient for a history of hypomania or mania before initiating an antidepressant.
- Depression and mania can present with irritability.
- For patients with depression who do not require admission, the clinician should initiate treatment in the PES and focus on maximizing adherence and follow-up.
- For patients with angry or irritable mood, the clinician should determine if a psychiatric disorder is present and be firm about the limited role of the PES in anger not due to a psychiatric or other medical condition.

PSYCHIATRIC EMERGENCY IN CASE OF PSYCHOMOTOR AGITATION

The classic example of incomprehensible agitation is the confusion agitation, which is characterized by a series of organic conditions: intoxications, acute somatic diseases (i.e., severe infections), and neurologic pathology. The clinical features are represented by disorientation in time and space; sometimes disorientation in personal or of one's around him personalities, hallucinations (usually visual), and oneiroid type of qualitative conscious disorder. On the other hand, the psychomotor agitation within acute stress disorder have a comprehensible characteristic, it's evolution develops while having a clear conscious, the affective features being of a negative hypertimic type, and the link to a psychological major stress being readily found and intelligible. The mood disorders should be researched both in depressive and in manic directions. In the depressive pole three clinical states should be discussed: agitated depression, raptus melancholicus (with great potential of others and self harm) and an agitation aroused from an endogen depression, being on a treatment. In the expansive pole, it will be the manic agitation, with it's extreme, the furor. A sudden and recent withdraw from a mood-stabilizing treatment (i.e., lithium, carbamazepine or valproic acid), and abuse of alcohol intake are predictive factors for a tumultuous start of the manic episode. The manic episode is characterized by a particular psychomotor agitation: eccentric clothing, funny verbal content, familiarity, aggressiveness, uncontrolled and theatrical gestures, hypererotism, obscenities, logorrhea, flight of ideas, evoked hypermnesia, impaired memory (retention), expansive mood, euphoria, irritable, insomnia, high appetite with loss in weight.

The schizophrenic agitation consists of hallucinations, not-systematized delusional thoughts, catatonic states, stupor, bizarre behavior, violent impulsions, grimaces, negativism, discordance, impenetrable speech, and difficult contact.

The polymorph delusional outbursts of the psychopaths have a rough onset, mood instability, delusional thoughts with expansive mystic, illustrious filiation, persecutory and depressive themes, hallucinations, behavior appropriate to it, insomnia, anorexia, tachycardia.

Paranoia, systematized chronic delusion becomes a psychiatric emergency due to antisocial reactions of big danger, others and self harm, due to delusional behavior, linked with persecutory, claiming, prejudice theme, violent agitation, aggressiveness, hallucinations, obnubilation and oniric states, secondary states or ambulatory automatism, with amnesiac fugue, delirious episodes which can exhibit a great aggressive potential, generating forensic behavior.

First aid

For a better understanding of the diagnose and for taking the appropriate decision in solving the emergency it will be collected the information from family members or the companions about the circumstances in which was triggered the outburst and the psychiatric anamnesis, current and lifetime. The doctor should establish a constructive rapport with the patient, presenting him self as a doctor and evaluating the general medical condition, this can discover organic disorders that can have psychiatric features and that need a special care and treatment (meningitis, TBC, cerebral hemorrhage, thrombotic stroke with aphasia), this way gaining patient's trust and thus diminishing the agitation. With calm and authority the doctor would prescribe the proper sedative treatment. Sedative psychotropic drugs should be anticipated by a cardiac function evaluation and will be administered in moderate doses in elderly persons. Sometimes restrain of the patient is needed. For a scared patient, diazepam could be at help (5-10mg). For a more agitated patient a quick way of calming could be obtained by giving 2-10mg of haloperidol, i.m., and repeated if necessary, each half our or our, till maximum of 60mg/day (depending on the weight and the physical condition of the patient). Chlorpromazine (75-150mg i.m.) is an alternative with a more sedative potential then haloperidol, but with a more probable hypotensive effect. When the patient is calm, haloperidol can

be continued in low dosage, usually three or four times a day, preferably per os, using a syrup if the patient can't swallow the tableted form. The dosage depends on the patient's weight and initial response to the drug.

The pharmacological treatment has usually following three objectives:

- a) Stopping or diminishing the agitated state;
- b) Solving the etiological base, when it can be discovered;
- c) Maintaining a good general condition of the body by administrating fortifying drugs and cardiovascular analeptics, which can prevent collapse.

Thus the treatment is complex, adapted for different types of agitation, in each particular case, taking into account the etiological factors, age etc.

The most utilized drug in agitated states remains chlorpromazine, the injectable form, administered 25-75mg deep i.m. In case of anxious agitation it is preferable levomepromazine, injectable form, 25mg deep i.m., and in the agitations in epilepsy it will be used injectable phenobarbital (1-2 ampules i.m.).

A particular good effect in agitated states has haloperidol; it's advantages are a minimum hypotensive effect and producing sedation without patient falling asleep.

Very often it is used a mixture of drugs:

- Chlorpromazine (1 ampull of 25mg) + Diazepam (1 ampull of 10mg);
- Levomepromazine (1 ampull of 25mg) + Diazepam (1 ampull of 10mg);
- Chlorpromazine (1 ampull of 25mg) + Haloperidol (1 ampull of 5mg);
- Chlorpromazine (1 ampull of 25mg) + Phenobarbital (1 ampull of 200mg);
- Phenobarbital (1 ampull of 200mg) + Diazepam (1 ampull of 10mg).

The compliant patients and the ones that fear injections it could be used the oral medication for solving the agitated state: levomepromazine (50-75mg), tioridazin (100-150mg), diazepam (20-30mg) etc., haloperidol drops (solution of 2% is administered in dosage of 30-90 drops; 10 drops equals to one milligram), pericyazine (solution of 4% is administered in dosage of 10-30 drops; 1 drop equals to one milligram) – it is recommended in cases of agitation in cognitive impaired patients, it is administered with water or food without the patient's knowledge (for example in dementia, mental retardation).

After the moment of administration of the neuroleptic drug the agitated patient should calm in 15-20 minutes. If the condition continues, it is repeated the initial dose each our till obtaining the sedative effect. When increasing the dose will take into consideration the age of the patient (careful with the elderly patients) and possible somatic conditions. For preventing a marked decrease in arterial blood pressure, it is recommended the association of cardiovascular analeptic drugs.

Psychiatric emergency in case of psychomotor inhibition

The stupor is characterized by a complete or almost complete immobility, the patients are inert, do not respond to the external requests or react late and vague, the mimic is fixed in a expression of pain or anxiety in depression, or completely inexpressive (amimia) as in catatonic stupor, similar to severe conscious disorders (sopor and coma). The stupor in psychiatric disorders can have several particularities in it's phenomenology correlated to the intensity of the disorder (neurotic, psychopathic, psychotic, confusional) and the particular aspects of nosological entities in which it develops. This way, the neurotic and psychopathic stupor is found especially in hysteria, where it has a sudden onset, due to strong conflicts. It is seen as an "attitude of negating the reality", the patient is presenting him self as if it was doped. The mimic expresses anxiety or it can show an aspect of hypomimia or amimia associated with hypertonia and tremor of the extremities, but in this condition the patient can react to psychotherapy through suggestion. In the stupor of psychotic

intensity (melancholic, schizophrenic, confusional, epileptic stupor), the clinical picture varies by nosological entity and by the level of conscious impairment. Thus, the melancholic stupor is characterized by the facies melacholicus. In schizophrenic stupor, the face is amimic or animated by paramimia, the patient remains akinetic and presents some times localized and variable hypertonus, other times – a cataleptic attitude. It is interesting to note, that in schizophrenic stupor, the patient passively participate in the activity of the environment, thus afterwards he can reproduce with accuracy all the events happened in that period. In the confusional stupor with an organic, toxic or infectious (severe) origin, the psychological activity appears almost suspended. This condition some times is interrupted by oneiroid, confusive-delirious states, which can leave a few mnesical pieces from the stupor period. The epileptic stupor is presented as a confusional stupor and it usually precedes seizure.

Total motor inertia (with a light muscular hypertonus), patient staying still in one position for a long period of time or an attitude that was given by the interviewer, it is known as catalepsy. Due to the muscular hypertonus, the body can maintain its position for a long time and can be modeled as a wax, and this is the reason why it is called waxy flexibility (*cerea flexibilitas*). In all these situations, the electromiographic examination will not have any findings, the result will be similar with the one from a voluntary contraction. The catalepsy can be found not only in catatonia, but also in the hypnotic suggestion, in hysteria, where it is shown as a “cataleptic attack”, a sudden onset associated with conscious disturbance (narrowing) and characterized by hypertonia in hyperextension, which realizes in the end a picture of an arc of a circle. The cataleptic sleep, in contrast to the cataleptic attack, is presented by complete motor inhibition, which due to the absence of hypertonia, can offer the impression of an apparent death, the more so as this state lasts longer, and the patient's respiration is imperceptible. Because several manifestations of hyper-, hypo- and akinesia are often found in catatonia, below will be described some of the constitutive elements of this condition.

The clinicians tend to associate this condition, exclusively with schizophrenia, although this syndrome is often found in mood disorders, neurological disorders, and side effects of some drugs. The most common psychological causes are schizophrenia and major mood disorders. In catatonic schizophrenia, the forced attitudes and postures, negativism are essential elements.

The approach of the patient should be systematic and clear, due to the polyfactorial etiology of the syndrome. Despite of the appearance, the patients are conscious, and they can recall the events and the conversations that happened during the episode. The diagnose is difficult to establish, even in patients with a major psychiatric disorder, because it can be considered a manifestation of the main disorder, a result of a neuroleptic treatment, a complication of drug abuse or of a neurological concomitant disease.

The differential diagnosis starts with the exclusion of organic hypothesis:

- Somatic conditions (hypercalcemia, hepatic encephalopathy, pellagra, diabetic ketoacidosis);
- Neurological conditions (encephalitis, Parkinson disease, injury of the frontal or temporal lobe, postictal states);
- Pharmacological and toxic conditions (neuroleptics, corticosteroids);

First aid

1. Tab. Risperidone 2mg
2. Antidepressants (Imipramine, Clomipramine, Sertraline, Paroxetine)
3. Electroconvulsive therapy (ECT) 7-10 sessions

The management of these patients is similar, beginning with a clear understanding of acceptable behavior and firm but supportive limit setting by the clinician. An effective strategy to accomplish this is to clearly state that certain behavior is unacceptable and why it is unacceptable. The patient should be offered two therapeutic alternatives. For example, *you cannot keep punching the walls, because your behavior is scaring other patients and you could injure yourself. Therefore,*

you can take some medication in orange juice or lay down in the quiet room until you feel more in control. Threatening the patient with punitive consequences will exacerbate the negative behavior. Medication such as benzodiazepines or antipsychotics may be useful in reducing the patient's agitation. Choice of medication should be determined by the presumed etiology of the patient's behavior. Effective communication between staff members, clinicians, and the patient is essential, as these patients may be manipulative or try to divide the PES staff. The strategies discussed earlier in dealing with agitated and aggressive patients are effective in dealing with difficult patients. Tincture of time is also an important therapeutic tool. These patients may require more time for an evaluation in order to discharge their affect, regain control of their behavior, and realistically discuss their options. An effective interpersonal intervention may avert hospitalization. A primary diagnosis of adjustment disorder, mood disorder, or brief psychosis will show that the decision to involuntarily hospitalize a patient is based on an illness rather than a pattern of maladaptive behavior. Involuntary commitment may be necessary for patients with unremitting homicidal or suicidal ideation.

Pharmacological Management of Psychiatric Emergencies

In the PES, a high priority is given to the treatment of agitated patients in order to reduce the incidence of patient and staff injuries and to reduce the patient's psychological discomfort. Management of agitation and aggression is complex because these nonspecific symptoms can occur in a wide variety of clinical conditions. These may include delirium, dementia, alcohol and drug intoxication or withdrawal, personality disorders, and psychosis secondary to psychotic illnesses. At times, patients are so agitated that they are unable to cooperate with a psychiatric or medical evaluation and are incapable of providing any relevant information.

Pharmacological management may initially serve as the primary therapy or as an adjunct to a verbal intervention. Clinically significant agitation may be defined as abnormal and excessive verbal or physical aggression, purposeless motor behaviors, heightened arousal, and significant disruption of patient's functioning. Behaviors that have been considered most typical of clinically significant agitation include:

- Explosive and/or unpredictable anger
- Intimidating behavior, restlessness, pacing, or excessive movement
- Physical and/or verbal self-abusiveness
- Demeaning or hostile verbal behavior
- Uncooperative or demanding behavior or resistance to care
- Impulsive or impatient behavior
- Low tolerance for pain or frustration

The goal of pharmacological intervention is to calm the patient without sedation so that he or she can participate in the evaluation and treatment plan. Whenever possible, the patient should be given the option of the route of administration as this can facilitate his or her sense of having some measure of control. The use of oral liquid or dissolving tablets is the least threatening and coercive pharmacological intervention and allows the patient to have a feeling of control and participation in treatment.

The most frequently used medication strategies consist of benzodiazepines, second-generation antipsychotic medication alone or in combination with a benzodiazepine, and haloperidol alone or in combination with a benzodiazepine. The most commonly used benzodiazepine is lorazepam.

Studies of the pharmacological treatment of agitation in a busy PES are methodologically challenging. A treatment algorithm for the management of acute agitation or aggression based on the extant literature is as follows:

- Orally disintegrating or liquid risperidone (Risperdal) (2 mg) combined with oral lorazepam (Ativan) (2 mg) or orally disintegrating olanzapine (Zyprexa) (5–10 mg) is the first line intervention for agitation.

- When oral medication is not appropriate because of the severity of the agitation, intramuscular (IM) lorazepam (2 mg) is recommended for delirium, substance withdrawal, and unknown causes or conditions not associated with psychosis.
- For severe agitation secondary to psychosis, IM ziprasidone (Geodon) (20 mg) that can be supplemented with IM lorazepam (2 mg) is first line.
- Second line recommendations for severe agitation secondary to psychosis are IM haloperidol (Haldol) (5 mg) and IM lorazepam (2 mg) or IM olanzapine (5–10 mg). Lorazepam should not be used in combination with olanzapine because of the risk of cardiorespiratory depression.

Aripiprazole (Abilify) is also available in IM form, oral solution, or orally disintegrating tablets but was not available in these formulations at the time of the publication of this algorithm.

Medication may be given every hour, up to three or four doses every 24 hours, though most patients will respond to a single dose of medication. The most common side effects with antipsychotic medications are dystonic reactions or akathisia, which can be effectively treated with IM benztropine (Cogentin) (2 mg). The most common side effects with benzodiazepines are sedation and ataxia.

There are no studies that have addressed the pharmacological management of agitation in children and adolescents in the PES setting. However, in emergency situations, a consensus of PES medical directors responded that risperidone or lorazepam are their preferred medications. There are also no outcome studies of or recommendations for treating the agitated pregnant patient. In the absence of safety data, clinicians should use the minimal amount of medication necessary to reduce agitation and aggression in these two groups of patients.

Management of Agitation and Aggression

Agitation is a nonspecific symptom that occurs across all medical and psychiatric diagnoses. Untreated agitation can escalate to violence. Managing agitation in the emergency setting is complicated by the need to make clinical decisions based on relatively incomplete psychiatric and medical assessments and histories. Medical illness can precipitate violent and aggressive behavior. Severe agitation may make it impossible to obtain an initial medical history, complete a medical examination, or collect screening laboratory studies. Once agitation subsides and the patient is more cooperative, a medical history and evaluation should be considered. The differential diagnosis for violence is summarized in Tab. 1.

Interventions for agitation should be conceptualized as hierarchal, beginning with the least restrictive and least intrusive interventions and only using the most restrictive interventions when all other treatment approaches have failed. The core clinical strategy for managing agitation is the use of interpersonal strategies that emphasize verbal intervention techniques. It is important for the clinician to reduce the patient's anxiety and fear by maintaining a humane and respectful disposition. A patient who is treated with honesty, dignity, and respect is likely to believe that they will be helped. Affect management is central to any effective aggression management technique. It involves acknowledging the patient's affect, validating it when appropriate and encouraging the patient to talk about his or her feelings. Attempting to use logic and rational thought with a patient who is flooded with affect will only lead to a further increase in agitation. An emotionally distraught patient requires an active response from the clinician. Use of active listening techniques, such as paraphrasing to the patient a brief encapsulated form of his or her statements, helps to convey that the clinician understands what the patient is experiencing. It is important to be honest and unambiguous. Talk down strategies require time and are often sufficient to reduce agitation and eliminate the risk of violence. Offering food or drink may help to facilitate a therapeutic alliance and reduce a patient's agitation. Management of aggressive patients may be compromised when they evoke feelings of fear, anger, or rejection and thoughts of retaliation in a clinician. In such instances the clinician should stop the interview and ask another staff member to continue the intervention.

Table 1. Differential Diagnosis of Violent Behavior

- Medical
 - Cerebral infection
 - Cerebral neoplasm
 - Electrolyte Imbalance
 - Hepatic disease
 - Hypoglycemia
 - Hypoxia
 - Infection
 - Renal disease
 - Temporal lobe epilepsy
 - Vitamin deficiency
- Substance Induced
 - Alcoholic intoxication
 - Alcohol withdrawal
 - Amphetamine intoxication
 - Cocaine intoxication
 - Delirium tremens
 - Inhalant Intoxication
 - Phencyclidine (PCP) intoxication
 - Sedative/hypnotic withdrawal
- Psychiatric
 - Antisocial personality disorder
 - Bipolar disorder
 - Borderline personality disorder
 - Catatonic schizophrenia
 - Decompensating obsessive compulsive personality disorder
 - Delusional disorder
 - Dissociative disorder
 - Impulse control disorder
 - Paranoid personality disorder
 - Schizophrenia
 - Social maladjustment without psychiatric disorders
 - Uncontrollable violence secondary to interpersonal stress

Emergency an case of Catatonic Patient

Catatonia is a syndrome of motor dysregulation characterized by fluctuating stupor, mutism, negativism, posturing, stereotypy, automatic obedience, and mannerisms. Two to four features elicit the diagnosis. Motor dysregulation is present when the patient has the capacity to move normally but cannot. Difficulties include trouble starting and stopping movements, frozen posture, and abnormal or inappropriate reaction times. Parkinsonism is another motor dysregulation syndrome.

Recognizing or eliciting the features of catatonia leads to straightforward diagnosis in the emergency setting. Catatonia, however, is a neurotoxic and potentially lethal state associated with many toxic, metabolic, and neuropsychiatric conditions. Its pathophysiology remains unclear, but its many etiologies likely reflect a common final pathway that involves dysregulation of the frontal lobe circuitry and motor regulatory areas of the brain. Psychiatric emergency clinicians must be

aware of the etiologies of catatonia, as well as the conditions mistaken for it. When recognized, catatonia can be treated safely and effectively, regardless of the underlying cause.

Epidemiology

The clinical key to catatonia is to look for it. The identification of catatonia, however, is often missed, leading to the false conclusion that the syndrome is rare. In a large Dutch study of acutely hospitalized psychotic patients, the treatment team recognized 2% to be catatonic, whereas systematic assessment identified 18% (Van der Heijden et al. 2005). Similarly designed studies have found about 10% of acutely ill psychiatric inpatients to be catatonic (Taylor and Fink 2003). Catatonia is also common among patients with severe general medical and neurological disease and in persons with autistic spectrum disorders, in whom its prevalence approaches 20% (Taylor and Fink 2003). G. Bush, G. Petrides, and A. Francis (personal communication, 1999) reported that of 249 consecutive psychiatric emergency room patients at a university hospital, 7% were catatonic.

The same systematic studies demonstrate that catatonia has several presentations and that patients with catatonia often are neither mute nor immobile. Excited forms of catatonia (e.g., manic delirium) are characterized by excessive motor activity, disorientation, confusion, and fantastic confabulation. In retarded forms of catatonia (e.g., the Kahlbaum syndrome), patients are in stupor with a decreased level of response to voice and noxious stimuli. They may retain substantial preservation of awareness, but speech and spontaneous movements are absent or reduced to a minimum, and generalized analgesia may be present.

The emergency department patient should be examined for catatonia when he or she exhibits passive uncooperativeness, muscle rigidity not associated with Parkinson's disease, behavior thought to reflect a conversion disorder or malingering, excited delirium, seizure-like behaviors, mutism or odd speech patterns not consistent with aphasia, or any of the classic features described below (see subsection "Examination"). The course of catatonia may be either simple or malignant. When considering prescribing an antipsychotic, the emergency department physician should first assess the patient for catatonia because most cases of malignant catatonia are triggered by antipsychotics and occur in dehydrated patients with unnoticed catatonic features.

Examination

Most patients with catatonia speak and move about (Abrams and Taylor 1976). Associated mood, speech, and language disturbances and psychotic features may be so intense that clinicians lose full attention to motor signs. Mutism and stupor are classic signs, but alone they are not pathognomic. The number of features and their duration required for the diagnosis are not experimentally established, but most patients exhibit four or more signs (Abrams and Taylor 1976).

Observed features of catatonia

- **Stupor** - State of decreased alertness in which patients are hypoactive and have diminished responses to voice and to painful stimuli. Stupor is similar in appearance to conscious sedation—the patient seems dazed.
- **Excitement** - Patients are impulsive and stereotypic, with sudden outbursts of talking, singing, dancing, and tearing at their clothes. Complex stereotypic movements may be frantic. Patients may be irritable and damage objects or injure themselves or others. This state may suddenly alternate with stupor.
- **Mutism** - Patients are awake but verbally unresponsive. Mutism is not always associated with immobility and may appear elective. Mutism includes lack of spontaneous speech associated with sluggish responding to questions using automatic answers such as "I don't know" (*speech prompt*) and making utterances of progressively less volume until speech is an inaudible mumble (*prosectic speech*).
- **Stimulus-bound behaviors:** *Echolalia* is present when the patient repeats the examiner's utterances. *Echopraxia* is present when the patient spontaneously copies the examiner's movements or is unable to refrain from copying the examiner's test movements despite

instructions to the contrary. *Utilization behavior* is present when the patient appears compelled to use objects (e.g., picking up objects, turning light switches on and off, pulling fire alarms, entering other patients' rooms).

- **Speech mannerisms** include robotic speech, foreign accent syndrome, and verbigeration (constant repetition of meaningless words or phrases) or palilalia (automatic repetition of words or phrases uttered with increasing speed).
- **Stereotypy**: Non-goal-directed, repetitive movements that often are awkward or stiff. They may be complex and ritualistic, or simple (grimacing, teeth/tongue clicking, rocking, sniffing, biting, burning, automatically touching/tapping).
- **Mannerisms** - Patient makes odd, purposeful movements, such as holding hands as if they were handguns, saluting passersby, or making exaggerated or stilted caricatures of mundane movements.

Elicited signs of catatonia

- **Ambitendency** - The patient appears "stuck" in an indecisive, hesitant movement, resulting from the examiner's verbally contradicting his or her own strong nonverbal signal, such as offering a hand as if to shake hands while stating, "Do not shake my hand; I don't want you to shake it."
- **Posturing** (catalepsy) - The patient maintains a posture for a long time. Common examples include standing in a room or lying in the same position in bed or on a sofa all day. More striking examples are an exaggerated pucker, lying in bed with head and shoulders elevated and unsupported as if on a pillow (psychological pillow), lying in a jackknifed position, sitting with upper and lower portions of the body twisted at right angles, holding arms above the head or raised in a prayer-like manner, and holding fingers and hands in odd positions.
- **Waxy flexibility** - The rigid patient's initial resistance to the examiner's manipulations is gradually overcome, allowing repositioning (as in bending a candle).
- **Automatic obedience (mitgehen)** - Despite instructions to the contrary ("be limp and let me do all the work...don't help me. ...pretend you're asleep"), the patient moves with the examiner's light pressure into a new position (posture), which may then be maintained by the patient despite instructions to the contrary. Test bilaterally because this sign may result from contralateral brain lesions.
- **Negativism** - The patient resists the examiner's manipulations, whether light or vigorous, with strength equal to that applied, as if bound to the stimulus of the examiner's actions. Negativism in patients' interactions with staff that may be misinterpreted as "bad behavior" includes sleeping under the bed, going to the bathroom when asked but soiling themselves there, turning away when addressed, refusing to open eyes, closing mouth when offered food or liquids.
- **Stimulus-bound speech** - In response to the clinician saying, "When I touch my nose, you touch your chest," the patient touches his or her nose in a mirrored behavior despite understanding the instruction

Management

Once recognized, catatonia can be treated effectively and rapidly. The overall strategy is to avoid antipsychotic agents, maintain fluid and electrolyte balance, use lorazepam for sedation, and consider ECT as definitive treatment. Catatonia responds well to treatment, regardless of the underlying cause. Neither the number nor the pattern of catatonic features predicts the response to treatment. The safest strategy to prevent relapse is to continue as maintenance treatment whatever prescription was effective during the acute illness.

Ensuring Safety and Stabilization

Although gratifyingly treatable, catatonia can be lethal. Patients with catatonia, especially those with syndromes of acute onset, need protection and care, best done in a hospital. Patients with

excited forms of catatonia may require seclusion and restraint to ensure their safety and that of others. A patient's vital signs should be obtained immediately. Patients with malignant forms of catatonia, which can involve hyperthermia, hypertension or hypotension, tachycardia, and tachypnea with poor oxygen saturation, should be managed in general medical emergency settings with hemodynamic support, intensive nursing care, and rapid assessment for other signs of malignant catatonia, including dehydration, renal failure, and electrolyte derangements (e.g., hyperkalemia).

Avoiding Antipsychotic Agents

To avoid precipitating a neurotoxic reaction, treatment with antipsychotic drugs must be discontinued and avoided. High-potency antipsychotic drugs, especially haloperidol, are commonly used to reduce excited and aggressive behavior, but in patients with catatonia, using these agents risks the development of malignant catatonia or neuroleptic malignant syndrome (MC/NMS). Nearly all dopamine antagonists have been associated with MC/NMS, although high-potency conventional antipsychotics are associated with a greater risk compared with their low-potency and atypical counterparts. Stienen et al. (2004) reported that over a 7-year period, a typical antipsychotic was imputed alone in 57% of MC/NMS cases. Although atypical antipsychotics are presumed safer than their typical counterparts, MC/NMS is reported for each atypical antipsychotic agent, and a significant number of MC/NMS cases occur at therapeutic doses of these agents (Fink and Taylor 2003).

A toxic reaction is particularly likely if patients are dehydrated, receive the medication parenterally or at higher titration rates, or are also receiving high doses of lithium. Patients with mania who are febrile or have had a prior episode of catatonia are even more susceptible to developing MC/NMS with haloperidol and other high-potency antipsychotic drugs.

Benzodiazepine Treatment

If a specific cause of catatonia is identified (e.g., nonconvulsive status epilepticus, anticholinergic-induced delirium, an alcohol toxicity syndrome), treatment of the cause takes priority. If no specific cause is quickly recognized, the patient with catatonia is best treated with benzodiazepines. Most experience has been with lorazepam and diazepam. (Because intravenous diazepam comes in a caustic vehicle, resulting in endothelial scarring and risk for embolus, it is avoided.) These drugs are effective. About 70%–80% of patients with malignant catatonia respond to lorazepam monotherapy (Hawkins et al. 1995; Koek and Mervis 1999; Schmider et al. 1999; Ungvari et al. 1994). Benzodiazepines are safe, and cardiac arrhythmia is extremely rare. Because reduced excitement and sleep occur long before respiratory depression (i.e., the sedation threshold is much lower than the threshold for respiratory depression), even high doses given intravenously are well below levels associated with this potential complication. Initial intravenous administration also permits careful dosing.

Dosages of lorazepam larger than ordinarily prescribed must be administered to be effective. In one study, for example, lorazepam 8–24 mg/day led to 70%–80% remission (Petrides and Fink 2000). For *stuporous* patients, dosing starts at 1–2 mg tid and is increased by 3 mg daily every 1–2 days as tolerated. If no substantial relief occurs after a few days, bilateral ECT becomes the treatment of choice and may be lifesaving. For *excited* patients, lorazepam doses need to be high and repeated at frequent intervals. Patients in manic delirium typically require restraints, followed by lorazepam 2–4 mg iv, depending on the patient's size, every 20 minutes until the patient is calm but awake. For patients with fever, hypertension, tachycardia, and tachypnea, lorazepam 2 mg iv should be administered every 8 hours, increasing by 3 mg/day as needed. Further dosing depends on the balance of response with sedation. Failure to respond within 2 days warrants bilateral ECT, scheduled initially on a daily basis. In extreme instances of excited catatonia, general anesthesia has been required.

Typically, a successful acute treatment course will take 4–10 days. When catatonia is relieved by benzodiazepines, further treatment of the associated psychopathology modifies standard

treatment algorithms to avoid catatonia-inducing antipsychotic agents, selective serotonin reuptake inhibitors (SSRIs), and gamma-aminobutyric acid type B (GABAB) agonists. To maintain remission, the benzodiazepine is continued at the effective dose for 3–6 months and then slowly tapered.

Electroconvulsive Therapy

When a benzodiazepine challenge does not elicit measurable improvement, preparation for ECT begins immediately. A failed challenge test (i.e., after 2–3 mg of lorazepam or equivalent) predicts a prolonged and often failed clinical trial of benzodiazepines. To wait until the treatment is considered failed before obtaining informed consent, laboratory assessments, and examinations for ECT will needlessly prolong the patient's illness and increase mortality risk.

ECT is given at a customary frequency with bitemporal electrode placement and brief-pulse currents. About 90% of catatonic patients remit with ECT, even those who have not responded to benzodiazepines. ECT not only will relieve the catatonia but also may improve the underlying psychopathology, particularly manic-depressive illness. ECT is safe and effective in patients with general medical conditions that may be the cause of or comorbid with catatonia. Although general medical conditions may limit the use of benzodiazepines, dantrolene, or dopamine agonists, there are no absolute contraindications to the use of ECT. Whenever a rapid, definitive treatment is needed, ECT is the treatment of choice for catatonia of any severity, in the widest range of patients, and with virtually any comorbidity. This issue should be considered when determining an inpatient disposition for a catatonic patient.

Emergency in case of catatonic malignant syndrome/ neuroleptic malignant syndrome

Malignant Catatonia/Neuroleptic Malignant Syndrome

Malignant catatonia (MC) is a life-threatening condition characterized by the motor features of catatonia combined with fever and autonomic instability. Patients with MC may also have muscle rigidity, posturing, negativism (gegenhalten), tremor, fever, diaphoresis, and tachypnea with inadequate oxygenation (Adland 1947; Fricchione et al. 2000). MC is the severest form of catatonia and warrants intensive care. Without adequate treatment, patients may die from muscle breakdown and resulting renal failure.

MC is clinically identical to neuroleptic malignant syndrome (NMS), and it is likely that NMS and MC reflect the same pathophysiology, differing only in that NMS is precipitated by an antipsychotic agent (Carroll and Taylor 1997; Fricchione 1985). MC was described before the development of antipsychotic drugs, and NMS has clinical characteristics, course, and response to treatment that are indistinguishable from MC. NMS has also been associated with agents outside the antipsychotic class and with several general medical conditions unrelated to exposure to a medication (Caroff and Mann 1993).

The immediate needs in the management of a patient with MC/NMS involve the discontinuation of antipsychotic medicines¹; protection of the patient when excited and delirious; temperature regulation and hydration; and intensive nursing care to avoid deep vein thrombosis, aspiration, and loss of skin integrity. ECT provides effective treatment of MC, with overall response rates reported in the literature ranging from 63% to 91% (Troller and Sachdev 1999). It needs to be administered early and intensively in febrile patients to contain the illness. When treatments are deferred beyond the first 5 days of hospital care, mortality increases sharply to over 10%.

Key Clinical Points

- Catatonia is a syndrome of motor dysregulation, most commonly associated with mood disorder (not schizophrenia).

- Catatonia can be readily identified when two or more classic features (stupor, mutism, negativism, posturing, stereotypy, automatic obedience) are present on exam.
- The most common error in the evaluation of catatonia is not considering it in the differential diagnosis and not performing an examination because of the mistaken belief that all patients with catatonia are mute, immobile, and frozen in a strange posture.
- Patients with catatonia fall into four broad groups, those with 1) mood disorder, 2) neurological illness, 3) exposure to an antipsychotic or serotonergic medication, and 4) metabolic derangement.
- Catatonia is a potentially neurotoxic and lethal state; it is best to consider neuroleptic malignant syndrome and toxic serotonin syndrome as malignant forms of catatonia with similar pathophysiology and treatment.
- Safe and effective management includes avoiding antipsychotic agents, prescribing lorazepam for symptom relief, and moving swiftly to electroconvulsive therapy as definitive treatment.

The Psychotic Patient

Definitions

Psychosis refers to “delusions, any prominent hallucinations, disorganized speech, or disorganized or catatonic behavior”.

Delusions are “erroneous beliefs that usually involve a misinterpretation of perceptions or experiences”.

Hallucinations are sensory perceptions not based in reality, and can be olfactory, visual, tactile, auditory, and even gustatory.

Disorganized speech occurs when the patient no longer expresses himself or herself coherently in structured sentences.

Disorganized behaviors can include sudden, unprovoked acts of violence; sexually inappropriate behavior; or even the inability to put on clothing correctly.

Catatonic behaviors include immobility, posturing, and mutism.

Initial Survey of the Patient

Mode of Presentation

A patient can come to the emergency room by ambulance, arrive under his or her own volition, or be brought to the emergency room by family, friends, strangers, or law enforcement personnel. Patients who self-present to the emergency room for psychosis fall generally into one of three major categories:

- 1) those who present with medical/somatic complaints,
- 2) those who present with social complaints, and
- 3) those who present with psychiatric complaints

Common reasons for such a patient to request help are hallucinations, feelings of persecution or paranoid ideation, mood symptoms, or social stressors. Patients often present complaining of homelessness, financial difficulties, or other social issues, only to reveal themselves to be flagrantly psychotic as well; a patient who requests a social intervention or appears to have secondary motives for presenting to the emergency room requires a full evaluation.

Psychotic patients are often referred to the emergency room by someone else. Behavior intolerable to the community, such as violence, aggression, agitation, and disorganized or inappropriate behavior, will commonly result in the involvement of either law enforcement or emergency medical services. Patients with persecutory delusions may make frequent complaints about others to law enforcement agencies and end up being referred for evaluation, thanks

usually to a concerned law enforcement officer. Families of psychotic individuals may bring their loved ones to emergency services for aggressive behaviors, or they may report that the patients have stopped eating, are not sleeping, are behaving oddly, or are otherwise unable to care for themselves.

Initial Assessment and Management

The initial psychiatric assessment is separate from the full interview that will follow, and it has one primary purpose: to assess danger and maintain a safe environment. Any patient who is physically violent on arrival to the emergency room requires immediate assessment and may require urgent behavioral and/or pharmacological intervention. Conversely, a patient who arrives in the psychiatric emergency room in some form of restraint may no longer require it.

Unfortunately, some acutely psychotic patients will not respond to verbal interventions or show of force. In such cases, the next step to ensure the safety of both patients and staff and to deescalate potentially dangerous situations generally involves the use of pharmacological interventions, physical restraints, or both.

The treating physician has several choices to make in determining the best pharmacological intervention for the acutely agitated psychotic patient: which medications to use, what doses to give, and by what route. Most emergency departments use either the intramuscular or oral form of medications to manage psychosis. Unless a patient is physically violent or in imminent danger of becoming so, a good practice, which may assist in establishing a better rapport with the patient, is to offer even the most seemingly agitated patient the option of taking medications by mouth (Currier et al. 2004). When intramuscular medication is required, it is advisable to first have the necessary staff on hand to restrain the patient physically, if necessary, because attempting to give an injection to an unwilling agitated patient without at least temporary restraint poses a significant risk of needlestick or other injury to all involved.

Traditional treatment of agitation and psychosis in emergent settings involved high doses of typical antipsychotics such as haloperidol (Hillard 1998). Over time, these doses were reduced due to the risks of side effects

such as acute dystonia. Antipsychotics remain the mainstay of treatment for acute agitation and psychosis in many emergency departments.

Benzodiazepines, such as lorazepam, are also frequently used.

More recently, atypical antipsychotics have been used to treat psychosis in the emergency department; olanzapine, ziprasidone, and aripiprazole are available in a short-acting intramuscular form. If a patient's agitation or acutely psychotic state can be managed with oral medications, clinicians have a larger field to choose from. The choice of which medications to use for agitation, and in what doses, should be tailored to the individual. In the absence of any further clinical information, a psychotic but otherwise healthy patient with no known allergies may be given a combination of haloperidol and lorazepam.

Evaluation of the Psychotic Patient

Following the initial triage and assessment of the psychotic patient, the patient should be searched and placed in a safe environment. The full psychiatric evaluation can then begin. During the interview, the same basic safety precautions that apply to all psychiatric patients should be closely followed.

The Interview

The evaluation of the psychotic patient should include, as much as the patient will tolerate, a complete history and mental status examination. Within the mental status examination, more time should be spent eliciting psychotic symptoms from the patient. Wording of questions to obtain the necessary information in a nonthreatening manner that is validating to the patient is critical to establishing the therapeutic alliance. Important areas of focus in the mental status examination of the psychotic patient include abstraction, characterization of thought process and content, and characterizing internal preoccupation. Patients should be asked about hallucinations in the least stigmatizing manner possible, especially patients experiencing a first psychotic episode.

When hallucinations are present, it is important to ask whether the patient hears one or more than one voice, whether voices talk to the patient or about the patient, and what the content of the hallucinations is. Patients should be questioned about command auditory hallucinations.

Questions about delusions should cover the range of common delusional types: persecutory, somatic, religious, and grandiose. When inquiring about delusional thoughts, the interviewer should tread carefully, because any fragile rapport he or she has managed to build with a paranoid or frankly delusional patient may be negated if the clinician appears to doubt or challenge a patient's firmly held belief; on the other hand, it is never acceptable practice to collude with a patient's delusions. In the case of somatic delusions, a patient presenting with a somatic complaint must receive a thorough and appropriate medical workup, even if the patient has a primary psychotic disorder, and particularly if there is no documentation of such a workup having been done in the past.

After completing the psychiatric evaluation, the clinician must form a differential diagnosis. For all patients presenting to the psychiatric emergency department, it is generally helpful to think about differential diagnosis in terms of several broad categories into which symptoms might fit:

- 1) medical conditions,
- 2) substance-induced conditions,
- 3) psychotic disorders,
- 4) mood disorders,
- 5) anxiety disorders.

Emergency in case of psychotic patient substance related

Although medical issues are often the least frequent cause of symptoms in patients who have already been triaged to psychiatry, patients should be examined for medical conditions first both because a medical issue presents a potentially quickly reversible cause of symptoms and because missing a medical condition can cause dire consequences. The clinician should not rush to conclude that a patient who appears psychotic has a primary psychiatric condition. Often these symptoms include delirium, a syndrome characterized by waxing and waning mental status that can also be accompanied by psychotic symptoms, including disorganization, hallucinations (particularly visual hallucinations), and false beliefs that are usually not fixed.

Given all the possible medical causes of psychotic symptoms, it is difficult to determine the appropriate medical workup for the psychotic patient (particularly given that most of these conditions are rare and tests will likely be low yield). Regardless of psychiatric history, every patient who presents with psychotic symptoms should at minimum have a complete blood count, a comprehensive metabolic profile, thyroid-stimulating hormone test, and syphilis screening. Given its prevalence and the added benefit as a public health measure, HIV testing should also be encouraged.

Treatment for psychosis secondary to a general medical condition should be directed toward addressing the underlying medical condition and is usually best accomplished on a medical unit with psychiatric consultation.

Substance-Induced Conditions

A variety of substances can cause psychotic symptoms, during either the intoxication phase or the withdrawal phase. Substance use can also predispose patients to falls and other accidents with consequent head trauma, which can then present with psychiatric symptoms. It is important not to fall into the trap of incorrectly attributing these symptoms to the substance use, because missing a head injury can lead to dire consequences for the patient. Patients with substance abuse who present with new-onset psychotic symptoms should be examined for evidence of head trauma and, if present, head imaging should be obtained.

All patients presenting with psychotic symptoms in the emergency department should be screened for substance use with urine or serum toxicology. Treatment for substance-induced psychosis usually involves maintaining the patient's safety in a psychiatric setting with supportive interventions until the symptoms resolve. An exception to this is delirium tremens, which requires aggressive medical management (often in an intensive care unit) to prevent seizures, aspiration, and death. Despite the fact that patients with substance-induced psychoses often do not have an underlying psychotic illness, they can benefit from antipsychotics and benzodiazepines on an as-needed basis during the episode to address their symptoms, particularly if agitation is prominent.

Emergency in case of psychotic patient with schizophrenia and schizoaffective psychoses

Perhaps the most obvious diagnoses to consider when a patient presents with psychotic symptoms include schizophrenia, schizoaffective disorder, schizophreniform disorder, and brief psychotic episode. These diagnoses are

distinguished from one another by history obtained from the patient and collateral information about time course, presence or absence of mood symptoms, and presence or absence of stressors. The following is a brief review of the criteria for each diagnosis (APA 2000):

- *Schizophrenia*. At least 6 months of symptoms, and at least 1 month of meeting two of the following symptoms: delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behavior, or negative symptoms.
- *Schizoaffective disorder*. At least 6 months of symptoms, including both mood and psychotic symptoms, with psychotic symptoms present for at least 2 weeks in the absence of mood symptoms at some point during the illness.
- *Schizophreniform disorder*. At least 1 month but less than 6 months of psychotic symptoms.
- *Brief psychotic episode*. Psychotic symptoms appear and resolve fully in less than 1 month; symptoms are often caused by the presence of an acute stressor. Treatment for primary psychotic disorders usually involves the use of antipsychotic agents combined with supportive psychotherapy.

Emergency in case of psychotic patient with mood disorders

Both manic and major depressive episodes can present with psychotic features. Given that mood disorders are much more common than primary psychotic disorders, and that the treatment and prognosis are different for patients with mood disorders with psychotic features than for patients with primary psychotic disorders, all patients presenting with psychotic symptoms should be evaluated closely, both during the interview and in the gathering of collateral information, for the presence of mood symptoms. Psychotic symptoms that are present during mood episodes are usually mood congruent (e.g., the manic patient may have grandiose delusions, whereas the depressed patient may have negativistic delusions, such as that his or her organs are rotting).

Treatment for mood disorders with psychotic features involves pharmacological treatment, both for the mood symptoms and for the psychotic symptoms, as well as psychotherapy.

Emergency in case of psychotic patient with anxiety disorders

Severe presentations of some anxiety disorders may appear to be psychosis, and this possibility should be considered in patients presenting to the emergency department. Some patients with obsessive-compulsive disorder can hold their obsessive thoughts so rigidly or engage in such

bizarre rituals as to appear psychotic. Patients who are in the midst of reexperiencing episodes of posttraumatic stress disorder can also appear psychotic. This phenomenon highlights the importance of obtaining a full psychiatric review of symptoms during the interview, because the treatment for these disorders will be very different than for primary psychotic disorders.

Emergency in case of febrile schizophrenia

It is a type of schizophrenia with a sudden onset, usually hyperacute and hypertoxic, which can escalate to a mental confusion (delirious-oneiroid type). Often, it presents with alternation of psychomotor agitation states and inhibition states with great inner anxious tension, interrupted by states of raptus characterized by self- and heteroaggression (the patient jumps out of his bed, may hit, detach his perfusion needles, take out the catheter etc.). The state of agitation and particularly the food negativism (refuse of food intake) worsen even more the general state.

The clinical picture is completed by severe vegetative disorders with arterial hyper/hypotension, acrocyanosis, hyperthermia, abundant perspirations, dehydration and sometimes sudden haemorrhage. The patients which suffer of this kind of type of schizophrenia, although rare, but still present in our days, die in approximately 2 weeks, in acute state of hyperthermia, with high levels of ESR, hyperleucocytosis.

Making a Decision about Appropriate Treatment

Having made a thorough risk assessment, the clinician will usually have a good impression of what he or she believes is the appropriate setting for treatment. If the psychotic patient is motivated to follow the clinician's recommendations, the decision about what to do at this point is easier. If the clinician believes that the patient would benefit from inpatient stabilization (either because of the degree of risk or because inpatient treatment would facilitate a more rapid workup and treatment of the patient's symptoms), then the patient can be admitted on a voluntary basis. Alternatively, if the clinician feels that the patient can be safely discharged with a higher level of outpatient care, he or she can feel reassured that the patient is likely to comply with such interventions. If a psychotic patient is not motivated for treatment, or if the patient actively opposes treatment, then the choice of an appropriate treatment setting is far more difficult. A lack of motivation for treatment is often associated with a greater severity of symptoms, increased clinical impression of dangerousness to others, high suspiciousness, and grandiosity (Mulder et al. 2005). Often, such situations require involuntary hospitalization. The clinician faces difficulties when the patient does not meet the legal standards for involuntary commitment but is unlikely to follow up with outpatient treatment. In such cases, the clinician can try to build a therapeutic alliance and to increase the patient's motivation (possibly by using techniques such as motivational interviewing) in the emergency setting. The clinician can also attempt to mobilize the patient's social supports (including family, friends, and treatment providers such as case managers) to encourage the patient's compliance with outpatient follow-up and to monitor closely for any worsening of symptoms that might warrant the patient's return to the emergency room.

Once a decision has been made to hospitalize a patient on either a voluntary or an involuntary basis, the clinician in the emergency department is also charged with initiating a plan for treatment until the patient is reassessed by the inpatient team. At that point, the medical workup should have already been initiated, and the clinician should communicate to the inpatient team what tests or medical issues need to be further pursued. A task that often falls to the emergency clinician is to initiate or make changes in the patient's pharmacological regimen. Pharmacological modifications are often required to reduce the patient's level of risk on the inpatient unit, for instance, if he or she has already demonstrated agitation in the emergency setting. However, in this era of managed care and brief hospitalizations, it is often necessary, even if agitation has not been present, to make medication changes immediately—rather than waiting for the inpatient team to

make a decision the next day—to facilitate the rapid management of symptoms. What follows is a brief list of factors that should be considered in the choice of neuroleptic agents for the psychotic patient:

- *Side effects.* Atypical (second-generation) antipsychotics pose a greater risk of metabolic syndrome, whereas typical (first-generation) antipsychotics pose an increased risk of extrapyramidal symptoms, tardive dyskinesia, and neuroleptic malignant syndrome. Each patient's situation should be considered individually based on the tolerability of these side effects and any personal or family history (e.g., diabetes) that might put the patient at greater risk of these side effects.
- *Personal history* (or family history) of response to a particular agent.
- *Potential for noncompliance.* The patient considered at high risk for “cheeking” while in the hospital may require an antipsychotic available in liquid or dissolving tablet form. The patient who may require a court order for medications over objection may benefit from an antipsychotic that is also available in a short-acting injectable form. The patient who is at chronic risk for noncompliance in the outpatient setting, even after being stabilized in the inpatient setting, might be best served by being started on the oral form of an antipsychotic that is also available as a long-acting injectable preparation, onto which the patient may later be titrated.
- *Cost and access issues.* It is important to ensure that after discharge, the patient will still be able to obtain the medication started; otherwise, the patient is more likely to become noncompliant in the future. If uninsured, the patient should be started on a medication that he or she will be able to afford when discharged, or the clinician should initiate efforts to get the patient insured. If the patient is insured but the insurance plan restricts the formulary of available agents, he or she should be started on a formulary agent if possible, or a request to the insurance company for the nonformulary agent needs to be made.
- *Frequency of dosing.* Patients tend to have greater rates of compliance with medications that have once-daily dosing as opposed to more frequent dosing.

Role of Psychiatrist as Psychoeducator

The psychiatrist plays a vital role in providing psychoeducation to patients and their families. Often, the emergency clinician is the first mental health contact for patients who have first-break psychosis and who may have no knowledge about their diagnosis or the way that the mental health system works. Frequently, patients with psychosis present to the psychiatric emergency room in a paranoid state, and the clinician's failure to disclose information about why the decision to admit or discharge has been made or why certain treatments have been ordered only serves to enhance this paranoia, leaving the patient needing to guess at why the clinician is doing what he or she is doing, and often ultimately ascribing a malevolent motive to the clinician.

The same can often be true for families, who see that their loved one is ill but, knowing the person in a healthy state, consider him or her as more capable of caring for himself or herself than the patient actually is. The family then perceives coercive measures, such as prn medications and involuntary admission, as victimizing rather than as caring for their loved one. Psychoeducation serves to reverse these misconceptions and helps to build an alliance in which the patient and family are active participants in the treatment plan. This alliance is well worth the time necessary to provide psychoeducation even in the busiest of emergency settings.

Key Clinical Points

- Psychosis is characterized by delusions, hallucinations, and disorganization of speech and behavior.
- Although primary psychotic disorders such as schizophrenia are the most obvious cause, patients presenting with psychosis need to be carefully evaluated for the presence of medical conditions, substance use, and other psychiatric conditions that could be causing their symptoms.

- Care must be taken in evaluating the psychotic patient to maintain safety while obtaining a history from the patient and collateral sources.
- Examining the history for risk factors for violence and self-harm will inform the clinician's decision regarding the need for hospitalization and further treatment.
- Antipsychotic medications play a key role both in controlling agitation and addressing psychotic symptoms, but nonpharmacological interventions such as psychoeducation also are vital in the treatment of psychotic patients in the emergency setting.

The Anxious Patient

Everyone experiences anxiety. Its complete absence is probably extremely rare, highly pathological, and perhaps incompatible with a long life. Anyone under acute threat should experience some elements of anxiety, both psychologically/ emotionally and physically. Activation of the sympathetic nervous system is a normal aspect of the response to threat and is a normal component of physical preparations needed to respond to or cope with threat. However, anxiety also can occur in the absence of genuine threat or in gross excess relative to the magnitude of the threat. In some people, it seems to be present at all times. When it occurs inappropriately, excessively, or uncontrollably and produces impairment in critical life functions anxiety is considered pathological, and an anxiety disorder is likely present.

The first challenge in assessing patients who present to the emergency department is differentiating true medical emergencies, which require specific interventions to preserve life or minimize tissue damage, from acute situations that entail less immediate risks. The presence of extreme anxiety does not by itself mean that real risk is low, because serious medical threats, such as chest pain from an impending myocardial infarction, can generate very intense fear. Therefore, the first rule in managing anxiety in the emergency department is to not let it get in the way of careful assessment for medical emergencies requiring immediate intervention.

Once immediate medical risks are ruled out and a likely psychosocial or psychiatric problem is identified, safety is still not assured, so the next step is careful assessment of psychiatric risk. The primary concerns at this point are risk of suicide or self-harm behaviors and risk of violence against others. Patients with only anxiety disorders are rarely violent, but anxiety does increase the risk for suicide, and highly anxious patients may well have other disorders (e.g., paranoid psychosis, borderline personality disorder) in which risks for injurious behavior toward self or others is elevated.

Anxiety disorders are very common; as many as one in four people may be affected by at least one of the six anxiety disorders. These disorders occur more frequently in women than men and are more common in people at lower socioeconomic levels. Panic disorder has a lifetime prevalence of 1.5%– 5% and is highly comorbid with other disorders. Ninety-one percent of patients with panic disorder have at least one other psychiatric diagnosis. A similar level of comorbidity is reported for generalized anxiety disorder, which has a reported lifetime prevalence of 5%. Up to 25% of the population may have a specific phobia. Lifetime prevalence of social anxiety disorder is variously estimated as between 3% and 13%. Lifetime prevalence of posttraumatic stress disorder (PTSD) is approximately 8%, although the prevalence is much higher in specific populations, such as combat veterans. The lifetime prevalence of obsessive-compulsive disorder is 2%–3% (Sadock and Sadock 2003).

EMERGENCY IN CASE OF PANIC ATTACK

Anxiety can be a chronic or subchronic condition, but it is also experienced acutely. Sudden onset of acute anxiety is most commonly experienced as fear. A sudden rise in fear may well be an appropriate response to a real threat, but it can also occur in the absence of threat in the form of a panic attack. Suddenonset fear is often accompanied by activation of the sympathetic nervous system, which may lead to increased heart rate, dilated pupils, and other physiological changes that prepare the organism to respond to threat. It triggers a heightened vigilance to both external cues and internal (bodily) states as the organism scans for sources of risk that may require immediate responses. This vigilance is associated with heightened awareness of physical sensations. In a panic attack, especially when real environmental threats are not present, these physical sensations are interpreted as a source of threat themselves, causing attention to be focused on them and leading to escalating sensations that might include palpitations, shortness of breath, lightheadedness, derealization, paresthesias, and/or nausea. These sensations in turn further heighten vigilance and the sense of threat, and generate catastrophic cognitions (e.g., "I am having a heart attack"), thereby creating an escalating "fear-of-fear" cycle that culminates in a full-blown attack. The subjective sensation of altered bodily states usually far exceeds any real changes in physiological parameters.

Whereas a panic attack may reflect an abnormal activation of fear systems, having a panic attack does not necessarily mean that a person has panic disorder. Over one-third of the population will have a panic attack sometime in their life, but less than 5% will develop panic disorder (Sadock and Sadock 2003). All humans carry the capacity to panic in response to perceived threat. A single attack, whether in response to an identified cue or not, does not constitute a disorder. Some people even have recurrent attacks but manage them effectively and suffer no impairment, and therefore do not qualify for a diagnosis. However, if at least one attack has been spontaneous, fear of further attacks develops, and functioning is impaired, then panic disorder is likely present. Many patients with panic also develop agoraphobia, which involves fear and avoidance of places from which escape might be difficult, with particular fear of having a panic attack and being unable to flee. Not all panic attacks that lead to behavioral avoidance are due to panic disorder. When attacks never occur spontaneously but are consistently triggered by specific, feared cues, specific phobia may be a more appropriate diagnosis. Typical phobic cues can range from small animals (e.g., spiders, snakes, dogs) to particular situational cues (e.g., heights, closed places, airplanes, storms). If the triggers focus on social scrutiny and fear of public embarrassment, the diagnosis might be social anxiety disorder.

People with panic attacks that are always triggered by specific cues can often successfully manage the attacks through careful avoidance of their triggers, although the ability to do this depends on how readily avoidable the triggers are and the "costs" incurred by avoidance behavior. For example, avoiding spiders is much easier than avoiding social situations or all forms of public transportation. When attacks occur spontaneously, as they do in panic disorder, use of avoidance to cope is more challenging and less effective; because the triggers are not circumscribed, the avoidance can become pervasive and disabling. Patients can become housebound, only leaving home to seek medical care for their perceived symptoms.

These differences have bearing on treatment decisions. Panic and avoidance linked to specific, circumscribed triggers can be treated nonpharmacologically, with exposure and desensitization. This treatment is based on the simple principle that fear-based avoidance usually involves automatic, cued triggering of alarm signals at subcortical levels of the brain, and the best way to decouple the triggering cues from the automatic responses is through systematic, graded exposure to the cues in a controlled setting, which allows desensitization of the automatic alarm response system to those cues. Although patients with panic attacks may have avoidance behaviors for which this type of exposure therapy may be useful, patients with panic disorder are much more likely to also require pharmacological intervention. The differential thus becomes important even in the emergency department, because initiation of pharmacological treatment for well-diagnosed

panic disorder might well be appropriate, but evaluation by an anxiety specialist might be important before medication is started for a phobia or social anxiety, for which exposure therapy might be the first-line treatment.

Management of a Panic Attack

Panic attacks are obviously frightening and uncomfortable. Patients with panic attacks will present to the emergency department with intense anxious distress, and the anxiety can be “contagious,” especially when a threat eliciting this strong response cannot be located. When interacting with a panicking patient, a clinician needs to avoid being pulled into the whirlwind of anxiety. False assurance, such as insisting that nothing threatening is happening even before any data that can support that impression have been collected, is not likely to be helpful. However, the patient may be calmed by assurance that appropriate steps will be taken to identify and address any threats, and that the expressed distress will be taken seriously and reduced. This calm approach will be critical in building the rapport needed to fully evaluate the presenting symptom, to obtain the history and testing needed to ensure that the patient does not have a more emergent medical condition, and to build a foundation for productively addressing the acute anxiety.

In addition to maintaining a calm and confident demeanor, but without false or condescending reassurance, the clinician can take additional steps to help calm the patient. Panic attacks are sometimes associated with hyperventilation, which can trigger and intensify physical symptoms. Helping the patient to slow his or her breathing through attention and control can be helpful, emphasizing that the key is slow breathing, not deep breathing, with enough tidal volume for adequate oxygenation but not with huge breaths that will keep pCO₂ (partial pressure of carbon dioxide) low. Progressive muscle relaxation, with systematic tensing and then relaxing of the various muscle groups of the body, is useful for some patients. Reassurance, as data are obtained, that the patient does not appear to be in acute medical danger can also help. Initiation of education—informing the patient that this could be a panic attack; that panic attacks are overwhelming and frightening but not truly threatening; and that if a panic attack, it will likely pass reasonably quickly if the patient just lets it run its course—can both calm and lay groundwork for subsequent treatment efforts. This education provides foundation for the cognitive component of cognitive-behavioral therapy, which has proved effective for treating panic, and can begin in the emergency department. The behavioral component involves exposure and desensitization to cues that trigger fear, but the acute setting is not likely to be an appropriate context for initiation of this part of the work.

Another cognitive tool used in cognitive-behavioral therapy for panic might also be useful for some patients in the emergency department. This involves directly addressing the catastrophic interpretations that patients with panic often attach to their symptoms with an exploration of past evidence relevant to their interpretations. For example, a patient who interprets chest pain as evidence that he or she is having a heart attack can be asked to review cardiac risk factors with the doctor and can usually be helped to see that he or she has many factors that make a heart attack unlikely; the patient may be young, lack a family history of cardiac disease, have favorable metabolic profiles, have normal blood pressure, and so on. If the patient has had previous episodes like this one that did not prove to be a heart attack, this can be discussed. The provider can also share his or her own experience with other patients with identical symptoms who have come to the emergency room and were proved not to be having heart attacks.

If the patient is preoccupied with fearful beliefs that can be directly addressed with behavioral tests, this can have a strong, beneficial impact. For example, some patients may be convinced that if they stand up, their blood pressure will drop and they will faint. With appropriate support, they may be willing to test this belief, by trying to stand with an automatic blood pressure monitor in place, and seeing exactly what happens to their heart rate and blood pressure, with education provided so they understand the changes. Activating these kinds of cognitive processes can help reduce the emotional focus and intensity.

If the patient's attack cannot be managed with reassurance and the types of techniques described above, use of a benzodiazepine can be considered. A relatively short-acting agent, such as lorazepam in a dose of 0.5–1 mg, is usually sufficient in a benzodiazepine-naive individual. Lorazepam can be used intramuscularly if the patient is unable to take an oral medication. Use of medication is presented as a secondary technique because benzodiazepines, even fast-acting ones like alprazolam, take time to enter the bloodstream and exert their effect on the brain. Panic attacks often abate naturally before the medication takes effect, but patients will falsely attribute their recovery to the drug and can rapidly develop psychological reliance on access to it. Even when a benzodiazepine does provide relief, its use can suggest to the patient that the anxiety symptoms cannot be controlled or endured without external assistance, diminishing the patient's self-efficacy and undermining the kind of cognitive and psychological work that is important in optimizing long-term recovery.

Initial Treatment of Panic Disorder

If panic is accurately diagnosed, appropriate treatment can be initiated in the emergency department, using both medications and nonpharmacological treatments. SSRI antidepressants are the drugs of choice; they can reduce both the frequency and intensity of panic attacks, and can be initiated in the emergency department (Wulsin et al. 2002). SSRIs have the advantage of also being useful for treating many of the comorbidities that are common in panic patients, including social anxiety, generalized anxiety disorder, PTSD, and depression. When prescribing SSRIs, the clinician should keep in mind that these patients have heightened interoceptive sensitivity and a propensity for catastrophic thinking around bodily sensations. Because SSRIs can cause bodily sensations in the first days to weeks of treatment, the risk of having a panic attack and abruptly discontinuing the medication in the titration phase is high. SSRIs can be somewhat activating on first exposure, and panic patients are particularly susceptible to this effect. If started at too high a dose or without adequate preparation, this early activation effect can lead some panic patients to refuse all future efforts to prescribe an SSRI for them, even though this early activation can in fact be a positive prognostic sign that their panic disorder will ultimately prove responsive to this same drug. This early sensitivity risk should be managed with clear instructions to the patient about what to anticipate and very gradual titration of the medication from the lowest possible initiation dose. Sertraline or citalopram are good first-choice drugs for panic patients. Sertraline has a very broad dosing range, so it can be started at very low levels (12.5 mg/day) and titrated slowly to a goal dose of 100–200 mg/day.

Citalopram is a good alternative, because it tends to be minimally activating, with fewer bodily sensations for the patient to misinterpret during titration. It can be started at 2.5 mg/day and titrated to a goal dose of 20–40 mg/day. With either drug, the titration pace can be adjusted to individual sensitivities and should be done under supervision, so close follow-up is important. A very slow titration pace should be used while the patient is awaiting follow-up.

If the process has been properly explained, sophisticated patients may be capable of learning how to adjust the titration pace themselves, according to their activation sensitivity. Long-acting benzodiazepines, such as clonazepam, can be prescribed in a scheduled fashion to reduce the patient's interoceptive sensitivity during the titration of an SSRI antidepressant. Rapid followup and active management of the medication titration is key to successful treatment.

Cognitive management of panic attacks is a cornerstone of treatment for panic disorder and this, too, can and should be initiated from the emergency department. Educating patients about how the amygdala and limbic brain process threats and generate normal fear and anxiety, with associated physiological activation that is adaptive when real threat is present, can lead to an increased sense of comfort that the physical sensations experienced during a panic attack are actually brain based, even if driven by a brain-generated "false alarm." Appropriate education and coaching in how to use this information as a cognitive coping tool may help reduce the pressure felt by these patients to pursue further medical workup through additional emergency department visits.

As discussed above, patients can be helped to search for evidence in their own experience and that of others to support the notion that their symptoms do have an explanation based in real biology and modern neuroscience, that their fear does not reflect weakness or psychological problems, and that the alarms ringing in their brains do not reflect real dangers. The simple act of labeling a physical sensation as related to anxiety can lead to increased mastery of the sensation and can directly reduce activity within the fear circuitry (Lieberman et al. 2007). Turning on cognitive processors and engaging in self-talk about one's inner physical and emotional experiences can actually reduce the amygdala outputs that generate or sustain the panic cycle. Knowing that labeling and thinking are, in a way, directly attacking the source of the problem can enhance a patient's motivation to pursue this methodology for coping with their symptoms.

Relaxation techniques—slow breathing and progressive muscle relaxation are useful approaches to managing acute anxiety within the emergency room. Evidence is mixed as to whether these techniques add meaningfully to the standard cognitive-behavioral therapy package used to treat panic, but they definitely will have some value to some patients during initial efforts to manage overwhelming anxiety and initiate a fuller treatment. Slow abdominal breathing can be taught in the emergency department and prescribed for 5–20 minutes at a time, one to three times per day. If the person is already trained in this technique, it can sometimes be helpful in an acute attack as well. Progressive muscle relaxation can also be easily taught in the emergency department. In this technique, patients are asked to scan their muscle groups from head to toe sequentially, contracting each muscle group for a few seconds, then relaxing the group for an equivalent amount of time, focusing on the general sensation of relaxation that occurs and spreads as a tensed muscle is relaxed. This technique can sometimes reduce the muscular tension that accumulates in anxiety disorders. Both techniques may directly reduce emotional arousal, perhaps by activating cognitive processors in the brain that inhibit amygdala output and by focusing attention on relaxation-related physical sensations instead of the fear-generating sensations. Patients can also be advised to engage in other types of meditative practices, although this is clearly more difficult to do in the emergency department setting if they do not have prior training. If the patient already has a meditative practice, its use and application to the panic situation can be reinforced.

Full treatment of anxiety disorders often includes an exposure-based component in the cognitive-behavioral therapy package. This component is always important if the symptom picture includes significant anxiety-based avoidance behavior. In exposure therapy, the goal is to reduce automatic anxiety responses to conditioned cues through a process of repeated exposure and desensitization. In panic disorder, both internal and external cues have become triggers for anxiety or fear, and therapy for panic often includes exposure to both types of cues. Exposure targets may therefore include both interoceptive cues (e.g., heart racing, shortness of breath, dizziness) and exteroceptive cues (e.g., feared places or activities). As discussed previously, the patient in an acute crisis may be too unstable to begin this form of treatment, and the emergency room does not lend itself to the type of support and instruction needed to initiate it. However, it can be valuable to introduce the patient to the idea that anxiety makes people want to avoid the things that trigger it but that this avoidance is the source of the most overwhelming disability imposed by the disorder. Everything patients can do to sustain functioning, to push through fear, to keep doing things that are in reality safe to do, will protect them from the worst consequences of panic. This introduces them to the notion that there is a definitive nondrug treatment for their condition, which can help them reclaim their ability to feel safe in the world, thereby helping to sustain hope and optimism. Rapid follow-up with a skilled clinician experienced with these techniques can then really have an impact and enhance outcomes.

EMERGENCY IN CASE OF ACUTE STRESS DISORDER AND POSTTRAUMATIC STRESS DISORDER

Acute trauma creates risk for psychiatric sequelae, whether the nature of the trauma is interpersonal violence, accident, or natural disaster. After a patient is medically cleared, the clinician can assess the patient for psychiatric sequelae and recommend treatment and/or prevention.

As previously noted, increased anxiety and central nervous system activation are normal responses to threat, but when they are particularly intense, prolonged, or disruptive of functioning, diagnosis and treatment of a stress disorder may be appropriate. The American Psychiatric Association (2000) defines two posttrauma disorders: acute stress disorder (ASD) and PTSD. Both require exposure to events that pose threats of death or serious injury and that elicit reactions of intense fear, helplessness, or horror. Additional symptoms can include dissociation or emotional numbing, reexperiencing of the trauma, avoidance, and hyperarousal. ASD must occur within 4 weeks of the trauma and last less than 4 weeks in total. It often evolves into PTSD, which requires symptoms for at least a month, although it can also resolve on its own. Given that ASD is a time-limited condition, treatment may not be needed or can itself be time limited. Insofar as the presence of ASD may predict risk for PTSD, early detection and treatment within emergency settings may be able to prevent subsequent complications that can be quite severe.

Evaluation of the Traumatized Patient

Although this is an evolving area of research, a number of risk factors for development of PTSD from ASD have been identified. A prospective study of 200 assault survivors showed that 17% of participants met criteria for ASD at 2 weeks and 24% of participants met criteria for PTSD at 6 months. Statistically significant predictors at 2 weeks of meeting criteria for PTSD at 6 months included prior psychological problems, low posttrauma social support, greater perceived threat to life, peritrauma emotional responses and dissociation, rumination about the trauma, and negative self-appraisals. Elevated resting heart rate at 2 weeks also was found to predict PTSD at 6 months (Kleim et al. 2007).

The nature of the trauma is also salient when assessing risk for progression to PTSD. Interpersonal trauma, such as rape or assault, carries higher risk than other types, such as natural disasters. This is especially true in women. The relative risk of PTSD from nonassaultive trauma fades with time, but the relative risk from interpersonal trauma does not. History of early-life interpersonal trauma increases risk of PTSD from recent trauma (Breslau 2001).

In evaluating trauma patients, therefore, the clinician needs to clarify the nature of the trauma; unearth past history of depression, anxiety, other psychiatric disorders, or early abuse; and explore trauma-related psychological experiences, such as a feeling of mental defeat and a propensity toward rumination or dissociation. It is critical to ensure rapid follow-up to evaluate for additional risk factors, such as ongoing somatic arousal, and to monitor the recovery process.

Aside from serving as a risk factor for development of PTSD, the nature of the trauma is also relevant insofar as patient behavior may contribute to increased risk of repeated exposure to trauma. Alcohol use, failure to use safety restraints, reckless driving, and impulses to harm self or others all contribute to a patient's emergency department presentation and create risk for future visits. For some patients, the emergency room visit may represent an "intervenable moment" in which behavior contributing to traumatic exposure can be addressed with heightened impact. It is important to note that ASD and PTSD are not the only psychiatric consequences of trauma. Reactivation or new onset of depression, substance abuse, and even psychosis can occur following trauma exposure. This may be especially true after a natural disaster, which can traumatize an entire community and eliminate system-level supports for patients with mental illness (S.L. Austin and Godleski 1999).

Digging too deeply into the details of the trauma with the patient is not without risks, especially for those patients who cannot remember critical details. Pushing too hard when a patient seems frightened by recollections or cannot recall details might intensify traumatic arousal and thus increase risk for PTSD. A form of critical incident debriefing that pushed the immediate recounting of trauma details was once widely used to help first responders to "debrief" after trauma exposure. However, available evidence does not support the effectiveness of this approach in reducing PTSD

risk. Emphasis has shifted toward “psychological first aid,” which focuses on immediate physical needs, social support, provision of safety, education, and normalization of acute psychological reactions (Litz and Maguen 2007).

Other Anxiety and Anxiety-Related Conditions

Although panic and trauma have particular salience in the emergency department context, other types of anxiety-related conditions impact the likelihood and nature of patient presentations to the emergency room. All of the anxiety disorders can contribute to heightened fear or worry in the face of physical symptoms and can increase the odds that a patient will appear for emergent care instead of pursuing help through less urgent avenues. Patients with obsessive-compulsive disorder may demonstrate a near-delusional level of concern about germs or infection. Patients with a blood-injection-injury phobia may faint when in the emergency department for another reason. Patients with generalized anxiety disorder may have a somatic focus for their worry, causing them to present to the emergency room for an evaluation that could wait for a primary care appointment. Similarly, somatoform disorders such as hypochondriasis and somatization also involve intense anxiety about physical symptoms, and even though they are not classified as anxiety disorders, they will bring highly anxious patients into the emergency department. A full discussion of these conditions is beyond the scope of this chapter.

Key Clinical Points

- Anxiety is a common complaint in the emergency department, and anxiety disorders pose a significant burden to the medical system if they are not adequately recognized and treated.
- Panic attacks can be managed without medications, using cognitive and behavioral techniques.
- SSRIs provide relief from most anxiety disorders, although a slow titration to the goal dose may be needed given the propensity of SSRIs to cause anxiety-provoking physical symptoms as these medications are initiated.
- Trauma patients with severe distress or dissociation in the aftermath of trauma exposure, a pretrauma history of mental illness, difficulty returning to normal functioning after the trauma, and signs of autonomic arousal are at highest risk of developing PTSD.
- PTSD risk may be reduced with rapid introduction to cognitive-behavioral techniques and normalization of life rhythms (e.g., sleep) after the traumatic event. There is insufficient evidence at this point to support efforts to prevent PTSD pharmacologically.
- High anxiety does not reduce the likelihood of major medical problems requiring urgent attention and should not divert attention from necessary medical evaluation. High risk may remain even if life-threatening medical illness is ruled out, because anxiety may reflect an underlying psychiatric disturbance that carries high risk for self-harm or harm to others.

PSYCHIATRIC EMERGENCY IN CASE OF GRIEF/MOURNING (PATHOLOGICAL INCLUSIVELY)

Grief, mourning, and bereavement are generally synonymous terms that describe a syndrome precipitated by the loss of a loved one.

Grief can occur for reasons other than the actual death of a loved one. These reasons include

- (1) loss of a loved one through separation, divorce, or incarceration;
- (2) loss of an emotionally charged object or circumstance (e.g. a prized possession or valued job or position);
- (3) loss of a fantasized love object (e.g., therapeutic abortion or death of an intrauterine fetus)
- (4) loss resulting from narcissistic injury (e.g.. amputation. mastectomy).

CLINICAL HINTS: GRIEF MANAGEMENT AND THERAPY

- Encourage the ventilation of feelings. Allow the patient to talk about loved ones. Reminiscing about positive experiences can be helpful.
- Do not tell a bereaved person not to cry or get angry
- Try to have a small group of people who knew the deceased talk about him or her in the presence of the grieving person.
- Do not prescribe anti-anxiety or antidepressant medication on a regular basis. If the person becomes acutely agitated, it is better to offer verbal comfort than a pill. However; small doses of medications (5 mg of diazepam (Valium)) may help in the short term.
- Frequent short visits are better than a few long visits.
- Be aware of delayed grief reaction, which occurs some time after a death and may be marked by behavioral changes, agitation, lability of mood, and substance abuse. Such reactions may occur close to the anniversary of a death (anniversary reaction).
- An anticipatory grief reaction occurs in advance of loss and can mitigate acute grief reaction at the actual time of loss. This can be a useful process if it is recognized when occurring.
- Be aware that the person grieving for a family member who died by suicide may not want to talk about his or her feelings of being stigmatized.

Grief and Bereavement can be classified in the following stages by authors:

John Bowlby

1. **Numbness or protest.** Characterized by distress, fear and anger. Shock may last moments, days, or months.
2. **Yearning and searching for the lost figure.** World seems empty and meaningless, but self-esteem remains intact. Characterized by preoccupation with lost person, physical restlessness, weeping, and anger. May last several months or even years.
3. **Disorganization and despair.** Restlessness and aimlessness. Increase in somatic preoccupation, withdrawal, introversion, and irritability. Repeated reliving of memories.
4. **Reorganization.** With establishment of new patterns, objects, and goods, grief recedes and is replaced by cherished memories. Healthy identification with deceased occurs.

CM Parkes

1. **Alarm.** A stressful state characterized by physiological changes (e.g., rise in blood pressure and heart rate); similar to Bowlby's first stage.
2. **Numbness.** Person appears superficially affected by loss but is actually protecting himself or herself from acute distress.
3. **Pining (searching).** Person looks for or is reminded of the lost person. Similar to Bowlby's second stage.
4. **Depression.** Person feels hopeless about future, cannot go on living, and withdraws from family and friends.
5. **Recovery and reorganization.** Person realizes that his or her life will continue with new adjustments and different goods.

Parent's and in children's grief

Loss of a parent	Loss of a child
<ul style="list-style-type: none"> • Phase of protest. The child wants very strong his lost parent back. • Phase of desperation. The child fills lost of hope, withdrawal and apathy. • Phase of detachment. The child 	<ul style="list-style-type: none"> • Could be an experience more intense than the loss of an adult. • The emotions of guilt and helplessness can be overwhelming. • Appear the phases of shock,

<p>gives away the emotional attachment towards the lost parent.</p> <ul style="list-style-type: none"> • The child can transfer his need in a parent onto one o another adult. 	<p>negation, mania, negotiation and acceptance.</p> <ul style="list-style-type: none"> • The manifestation of grief can last for the entire life. • Almost 50% of marriages in which a child died end up in divorce.
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Grief Versus Depression

Grief	Depression
<ul style="list-style-type: none"> • Normal identification with deceased. Little ambivalence toward deceased. • Crying, weight loss, decreased libido, withdrawal, insomnia, irritability, decreased concentration and attention. • Suicidal ideas rare. • Self-blame relates to how deceased was treated. • No global feelings of worthlessness. • Evokes empathy and sympathy. • Symptoms abate with time. Self-limited. Usually clears within 6 months to 1 year. • Vulnerable to physical illness. • Responds to reassurance and social contacts. • Not helped by antidepressant medication. 	<ul style="list-style-type: none"> • Abnormal overidentification with deceased. Increased ambivalence and unconscious anger toward deceased. • Similar. • Suicidal ideas common. • Self-blame is global. • Person thinks he or she is generally bad or worthless. • Usually evokes interpersonal annoyance or irritation. • Symptoms do not abate and may worsen. May still be present after years. • Vulnerable to physical illness. • Does not respond to reassurance and pushes away social contacts. • Helped by antidepressant medication.

Psychiatric emergency in natural disasters

Psychological disturbances in crisis and disasters occupy a special place due to the fact that in the same time they could affect a large number of persons that can disorganize the entire activity of helping procedures. This determinates the need of operative evaluation of the conditions of those who suffer, the prognosis of the determined disorders, and the possible treatment activities.

By extreme conditions, in these cases, we understand the life, health and well-being threatening situations of an important group of population, conditioned by cataclysms, disasters, crashes, the use by the enemy of different weapons of mass destruction in case of war. Any extreme actions are considered catastrophic when they cause massive destructions, cause death, injuries or suffering to a huge number of populations. The World Health Organization defines a disaster as a situation, characterized by a serious unexpected danger to the society's health.

The psychopathological disturbances in extreme situations have a lot in common with the clinical disturbances that develop in regular situations. But at the same time, there are big differences too. In the first place, as a result of multiple psycho-traumatizing factor actions that happen in extreme situations, it affects a huge number of persons. In the second place, the clinical picture does not have an individual character, as in common psycho-traumatizing conditions and it is narrowing to a little number of psychiatric manifestations. One of the particularities is that despite developing a psychological disturbance and the continuing danger situation, the suffering person should continue to actively fight with the results of the disaster for surviving and for maintaining the relatives and others' lives.

Reactive states, which arise in calamities and catastrophes, are a part of a big group of psychiatric disturbances, which include neurotic and patho-characterological reactions, reactive neurosis and psychosis.

The acute and powerful traumatic actions usually correlate with the disaster situation, where it appears the fear for one's life and for the health of relatives. One of the main particularities of these traumas is that they are not current for the personality and do not relate with the pre-morbid. The situation of terror touches more the emotional part and it appears as an intense processing of the personality, a reaction that appears in a reflector way.

Judging by the clinical picture of the psychiatric disturbances we can split them into two groups: with non-psychotic and psychotic features.

All the patients with psychotic features after the first aid are referred to the medical group and if possible evacuated. Those with psychogenic disturbances, which need medical help, are referred to the institutions next to the location of the disaster.

From the moment of offering the first aid by the psychiatric mobile group, it is recommended to organize psychiatric offices or departments in the ambulatory health services centers next to the disaster zone, where the suffering ones and the ones participating in activities of recovery and help can refer. These departments can meet the diagnostic and treatment functions for short duration of the psychiatric borderline disturbances. In these cases it is necessary to predict the general and the provisory hospitalization of the persons that need psychiatric help.

As solving the life-threatening situations and reducing the possibility of reactive psychosis, the importance of organizing a psychotherapeutic work among the population increases, in the hospitals next to the suffered region and in the evacuation spaces. In these locations should be included doctors from the psychiatric, neurologic and general medicine institutions.

For the reaction to adaptation and for the neurotic disturbances the goal of any psychiatric and medico-psychological action is prophylaxis of psychological maladjustment, psychiatric and psychosomatic disorders. But it is not necessary a special treatment at a professional: it is needed a consultation for a differential diagnosis of his/hers health. In these cases, in line with solving the traumatic actions could be additionally used psycho-correction, psychotherapy, cognitive-behavioral and others. Sometimes there is need in a short rest, physiotherapy, reflexo-therapy. Can be indicated nootropic, adaptogenic drugs, which have the effect as treatment and prophylaxis, also tranquilizers and psychostimulants.

In the cases of neurotic reactions, the main aim of the treatment is reducing the anxiety and the fear, adaptation to life and activity of the person in the condition of persisting psychogenic factors. This is achieved by administering tranquilizers, antidepressant drugs with a universal action of calming and psychotherapy. The most efficient psychotherapeutic method in these cases is cognitive psychotherapy. The method takes into consideration the particularities of the suffering ones, that need to talk about the catastrophe, about the most important and most terrifying scenes to

them. Active questions, careful and kind listening, “evoking” the most unpleasant emotions permits to decrease the affective tension, to structure the emotions and activating the goal oriented activity of the suffering ones.

In case the situation settles down the psychiatric and medico-psychological help is offered to the ones that seek it. In this period the specialized psychiatric help group is included in work. Reactive prolonged psychoses need treatment in hospital.

The only principle of undergoing psychotherapy in case of psychological maladjustment in cataclysms, the clinical manifestation in different types of psycho-neurological and psychosomatic borderline disturbances, is a differential combination of methods, mostly in symptomatic, personality and social-orientated direction.

In case of neurotic reactions and other neurotic disturbances are used different types of individual and group psychotherapy personality-oriented of short duration, which totally achieves the etiopathogenetic action for understanding and solving the reasons and mechanisms of psychological maladjustment.

For reducing and solving the neurotic disturbances it is used the hypnosis, autogenic training, behavioral methods and other. With hypnotic suggestion could be addressed almost any neurotic symptom. The autogenic training it is indicated mostly for the neuroasthenic disturbances. The behavioral methods are very efficient in solving the obsessive-phobic disturbances. Rational psychotherapy it is utilized independently or in conjunction with other methods. The work is done with the logical thinking of the patient, as a treatment factor is used the doctors authority, persuading, repersuading, explicating etc. The tight link between biological, psychological and social factors in the maladjustment mechanism in those who suffered in calamities and catastrophes defines the complex character of the therapy.

PSYCHIATRIC EMERGENCY IN CASE OF REFUSE OR ABUSE IN ALIMENTATION

Anorexia nervosa

Anorexia nervosa is a major psychiatric emergency, being a rare psychiatric condition “in which a fatal end is real possibility”. Anorexia nervosa is a predominantly adolescent disorder, which affects usually girls, 12 to 25 years old, and a little percent of boys. In the clinical picture we see psychological anorexia – the patient fights against his appetite, and the repulsion to food appears not only at ingestion or having in their site of view, but also when he represents it (think about it): amenorrhea – usually, oligomenorrhea with hypomenorrhea; important decrease in weight and anemia. A disorder which was considered for a long time being a endocrine one (a form of hypophysis and ovarian insufficiency), the modern investigations proved that is a psychiatric disorder, the endocrine changes being secondary and having a later onset. The psychopathological manifestations in anorexia nervosa can be attributed rather than otherwise to a type of reaction that develops in some cases as a neurosis and in other cases as a psychosis (or as a manifestation of a psychosis), having in background a disharmonic personality, the disorder is a particular form of adolescent crisis. Clinical phenomenology and the good social insertion of the patient (the adolescent girls with anorexia nervosa are hyperactive physically and intellectually), and the favorable evolution rather exclude the psychotic process, where the food-intake refuse is secondary to the manifestations of delusional thoughts. The refusal of maintaining at, or above a certain minimal normal weight for she’s age and height (i.e., weight loss that leads to maintaining the body weight at a lower than 85% of the expected or incapacity to increase the expected weight during the growth period that leads to a body weight less than 85% from the expected one).

From the psychopathological point of view, the disturbances are polymorph and include:

A. Intense fear to not gain in weight or to become obese, even if she’s underweight;

- B. Disturbances of the way in which is experienced own weight or body shape, not due to influence of weight or body shape on self evaluation or denying the seriousness of low body weight;
- C. Women in post-menarche, amenorrhea, which means the absence of at list three consecutive menstrual cycles. (A woman is considered that has amenorrhea if menses occur only after the administration of hormones, for example estrogens).

First aid

- 1. Individual and family psychotherapy
- 2. Treatment with insulin in low doses
- 3. Tranquilizers
- 4. Sedative neuroleptics
- 5. Antidepressants

ICD-10 Diagnostic Criteria for Anorexia Nervosa

- A. There is weight loss or, in children, a lack of weight gain, leading to a body weight at least 15% below the normal or expected weight for age and height.
- B. The weight loss is self-induced by avoidance of “fattening foods.”
- C. There is self-perception of being too fat, with an intrusive dread of fatness, which leads to a self-imposed low weight threshold.
- D. A widespread endocrine disorder involving the hypothalamicpituitary-gonadal axis is manifest in women as amenorrhea and in men as a loss of sexual interest and potency. (An apparent exception is the persistence of vaginal bleeds in anorexic women who are on replacement hormonal therapy, most commonly taken as a contraceptive pill.)
- E. The disorder does not meet Criteria A and B for bulimia nervosa.

Comments

The following features support the diagnosis but are not essential elements: Self-induced vomiting, self-induced purging, excessive exercise, and use of appetite suppressants or diuretics. If onset is prepubertal, the sequence of pubertal events is delayed or even arrested (growth ceases—in girls, the breasts do not develop and there is a primary amenorrhea; in boys, the genitals remain juvenile). With recovery, puberty is often completed normally, but the menarche is late.

Atypical anorexia nervosa

Researchers studying atypical forms of anorexia nervosa are recommended to make their own decisions about the number and type of criteria to be fulfilled.

Treatment of Anorexia Nervosa

Inpatient care is indicated not only for physiological abnormalities, but also to provide 24-hour treatment, management, and containment for the intensively ingrained behavioral abnormalities, such as starving, compulsive exercising, and purging, which often have failed to respond to even full-day programs. At weights below 20 percent less than healthy, except under unusual circumstances, most patients require inpatient care, especially if the eating disorder is recurrent or associated with significant psychological or medical comorbidity. Even full-day or partial hospital programs may not provide adequate containment to produce recovery but are increasingly used in the spectrum of care.

Controversy exists concerning the propriety and use of treating treatment-reluctant patients on an involuntary basis through legal commitment. Approximately 10 to 15 percent of cases in large

treatment programs require involuntary treatment. In life-threatening cases, involuntary treatment is appropriate when persuasion alone fails to get the patient to agree to accept treatment.

Reluctance of some third-party payers to authorize ongoing care for severely ill anorexia nervosa patients presents a formidable challenge to patients, families, and clinicians. As lengths of stay have decreased for anorexia nervosa due to insurance restrictions, relapse rates have increased. Effective state and federal parity laws, as well as judicial decisions, may help. A federal district court-level decision ruling that medical benefits should be made available to patients with anorexia nervosa until they reach 85 percent of healthy weight has been underutilized as a precedent for accessing medical benefits for the starvation associated with anorexia nervosa.

Typical anorexia nervosa patients can transition to partial hospital from inpatient care at 85 percent of healthy weight, but exceptions occur. The essential difference between partial hospital and inpatient care is the length of treatment during the 24-hour day, not the intensity of treatment or the adequacy of a multidisciplinary staff. Short-term successful treatment appears directly related to the number of hours per day and number of days per week of containment and treatment. Going from 5 to 4 days per week in day programs has resulted in approximately 25 percent less effectiveness.

Regarding exceptions to hospital care, research is currently under way to examine the effectiveness of supervised family-based outpatient treatment, in which highly motivated, involved, carefully instructed, and closely supervised parents may supervise the refeeding of young adolescent patients—the so-called Maudsley model, now administered in a structured treatment protocol and often successful. Data from these studies may influence treatment practices in the future.

Bulimia nervosa

This disorder includes the following features:

A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

(1) Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances

(2) a sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)

B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.

C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least twice a week for 3 months.

D. Self-evaluation is unduly influenced by body shape and weight.

E. The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

First aid

6. Individual and family psychotherapy
7. Treatment with insulin in low doses
8. Tranquilizers
9. Sedative neuroleptics
10. Antidepressants

ICD-10 Diagnostic Criteria for Bulimia Nervosa

- A. There are recurrent episodes of overeating (at least twice a week over a period of 3 months) in which large amounts of food are consumed in short periods.
- B. There is persistent preoccupation with eating and a strong desire or a sense of compulsion to eat (craving).
- C. The patient attempts to counteract the “fattening” effects of food by one or more of the following:
 - 1) self-induced vomiting
 - 2) self-induced purging
 - 3) alternating periods of starvation
 - 4) use of drugs such as appetite suppressants, thyroid preparations, or diuretics; when bulimia occurs in diabetic patients, they may choose to neglect their insulin treatment
- D. There is self-perception of being too fat, with an intrusive dread of fatness (usually leading to underweight).

Atypical bulimia nervosa

Researchers studying atypical forms of bulimia nervosa, such as those involving normal or excessive body weight, are recommended to make their own decisions about the number and type of criteria to be fulfilled.

Treatment of Bulimia Nervosa

Psychiatric hospitalization is only occasionally indicated for the treatment of normal weight patients with bulimia nervosa. Exceptions are the presence of intractable symptoms producing significant physiological impairment, repeated failure to respond to competent outpatient treatment, suicidality, and the presence of complicating comorbidities, especially borderline personality disorder, substance abuse, and mood disorders. Fifteen percent of recent and less severe cases of bulimia nervosa have responded to four sessions of psychoeducation emphasizing healthy nutrition with relief of bulimic symptoms and behaviors. Up to 20 percent respond to guided self-help programs using professionally prepared manuals, psychoeducation, and cognitive-behavioral principles. For the average moderately severe case of bulimia nervosa, cognitive-behavioral therapy has been clearly documented as an effective treatment that is superior to other forms of psychotherapy or psychopharmacology alone. Of concern is the fact that relatively few clinicians have currently received adequate training in cognitive-behavioral psychotherapy skills. Cognitive-behavioral therapy has been effective in both individual and group formats, with short-term abstinence reported by 40 to 50 percent of cases treated with cognitive-behavioral therapy and symptom reduction to a lesser degree reported in higher percentages. If patients show little response to cognitive-behavioral therapy after approximately eight sessions, studies suggest that adding an SSRI will improve outcome. At times, other psychotherapies, especially interpersonal psychotherapy, may be most useful. Psychodynamically informed psychotherapies have not yet been well studied for bulimia nervosa, but experienced clinicians value psychotherapeutic tactics derived from psychodynamic perspectives, particularly relational therapies, self-psychology, and focal analytic therapies. Enhancing motivation is a key early treatment element. For adolescents living with their parents, family therapy using the **Maudsley model** may be effective, but in comparison with cognitive-behavioral therapy, the latter has the slight advantage of offering a more rapid reduction of bingeing, lower cost, and greater patient acceptability.

Antidepressants have been shown to be effective for symptom reduction in bulimia nervosa, with approximately 60 percent experiencing some symptom reduction. However, their use as a sole therapy is not adequate to effectively treat most patients, as relatively few patients become abstinent of binge eating and purging on medication alone, and most relapse if the medication is discontinued. Among the SSRIs fluoxetine (Prozac) has been the most extensively studied, and higher doses—60 to 80 mg per day—appear to be more effective than the 20- to 40-mg per day

traditional antidepressant dose if there are OCD components. In addition, TCAs, monoamine oxidase inhibitors (MAOIs), and atypical antiepileptic agents such as topiramate (Topamax) have been effective in randomized-controlled trials, although generally more problematic due to side effects and potential for suicide by overdose. Bupropion (Wellbutrin) is relatively contraindicated due to an increased risk for seizures in patients with bulimia nervosa. In practice, if results from the initial medication trials are inadequate, clinicians have found that empirically trying several medications in sequence yields better results. If results are beneficial, a minimum of 6 months to a year or more on medication is suggested, preferably in conjunction with cognitive-behavioral therapy. Some patients who are unresponsive to any other medication may benefit from a carefully monitored trial of ondansetron (Zofran), an antiemetic that directly affects vagus nerve function. Studies in which bulimic patients have been treated with both evidence-based psychotherapy and conjoint psychopharmacology show small but important benefits over cognitive-behavioral therapy alone and, especially, over medications alone.

The Cognitively Impaired Patient

The patient with cognitive impairment presents unique challenges in emergency psychiatry. Many discrete psychiatric illnesses are associated with cognitive impairment. Thus, the differential diagnosis of cognitive impairment is broad, covering many, often overlapping diagnostic categories and forcing the physician to consider many possibilities. In addition, the “core deficit” of cognitive impairment may be less dramatic in its emergency presentation than the more “disruptive” clinical states (e.g., psychosis, mania, motor agitation, violence against self and/or others) that may be the initial focus of clinical attention. Therefore, the clinician encountering numerous disruptive clinical states in an emergency setting must keep in mind the possibility of an underlying cognitive disorder as explanatory for the bulk of the patient’s clinical problems.

Clinical disposition of the emergency presentation of cognitive impairment may be quite varied and sometimes challenging, and may include the emergent use of psychopharmacology, medical or surgical admission with psychiatric psychosomatic medicine consultation, medical-psychiatric unit admission, psychiatric unit admission, or placement in alternative models of supervised living. By necessity, the definitive psychiatric diagnosis and longterm management plan may not always be achievable in the emergency setting; initial assessment and intervention, however, remain crucial to the eventual definitive disposition of these cases. As the population has aged, the prevalence of cognitive disorders has increased (Blennow et al. 2006). Therefore, mastery of the emergency management of these patients is a clinical imperative.

Emergency in case of cognitively impaired patient: delirium tremens

According to DSM-IV-TR, delirium is a subacute to acute-onset condition characterized by circadian disturbances, cognitive impairment, altered level of arousal and attention, and a variable course. The keys to a diagnosis of delirium are the acute or subacute onset and the fluctuating course. Although delirium is invariably the consequence of one or more systemic disturbance(s), the most important “static” risk factor for the development of delirium is preexisting dementia, a concept that can be understood as the “vulnerable brain” or “decreased cognitive reserve” (Engel and Romano 2004). Even though delirium presents with an acute or subacute onset, it can become chronic if the underlying systemic cause is not reversed. Although the dementia patient is highly vulnerable to the development of delirium, delirium occurs in patients without dementia as well.

Therefore, emergency presentation of delirium mandates an efficient but thorough clinical search for the implicated systemic disturbance(s). The associated systemic disturbance(s) in delirium may not be evident initially; however, delirium should be managed actively and syndromally while the search for systemic precipitants proceeds apace. Due to the myriad causes of delirium, the workup must be thorough and is ideally initiated in the emergency department. Because delirium is the psychiatric manifestation of systemic illness, the focus of clinical inquiry must cover many possible organ systems. Treatment of delirium must be initiated promptly, even before the systemic disturbances associated with its onset are determined and reversed. Patients may remember the delirium episode, and delirium is often quite frightening to family members.

Alcohol and/or Drug Disorders

Various substance-related conditions may present with cognitive impairment. Alcohol or drug intoxication may result in temporary cognitive impairment. Alcohol “blackouts” (brief periods of amnesia associated with alcohol dependence) may lead to emergency evaluation. Withdrawal from alcohol, sedatives, or hypnotics may present with frank delirium and autonomic instability (Engel and Romano 2004).

Alcohol Withdrawal

Alcohol withdrawal is the most common presentation in this category and may be complicated both by the possibility of high blood alcohol levels and by concomitant stimulant use or simultaneous withdrawal from another substance. Combativeness and aggression can be seen in both alcohol intoxication and withdrawal, yet the typical return of stability in a severely intoxicated alcohol-dependent patient as the BAL normalizes is a familiar picture to those working in the emergency department. The BAL at which withdrawal appears varies from patient to patient and can begin in as little as 6 hours from the last drink in chronic alcoholics. The withdrawal syndrome is characterized by autonomic instability with elevated blood pressure, tachycardia, and profuse sweating; gastrointestinal symptoms with nausea, vomiting, and diarrhea; and CNS activation with anxiety and tremor. Hallucinations and seizures, typically single grand mal events, can herald more serious withdrawal complications. After 48–72 hours, about 5% of patients in alcohol withdrawal will develop a syndrome known as delirium tremens (DTs), which includes hallucinations (usually visual), delirium, and severe autonomic instability. Early, aggressive treatment of emerging alcohol withdrawal can prevent progression to DTs, which can be lethal in 5%–10% of patients despite treatment and in 20%–35% without treatment. Consumption of large quantities of alcohol, concomitant medical illness such as pneumonia, and a history of DTs increase the risk that a patient will enter into DTs during the course of withdrawal (Ferguson et al. 1996).

The optimal strategy for treating alcohol withdrawal is substituting a physiologically equivalent agent, such as BZD, that has a longer half-life, and then gradually tapering it off. This avoids an abrupt shift in equilibrium from the compensated intoxicated state to the uncompensated abstinent state. Even shorter-acting BZDs, such as lorazepam (1–2 mg iv or po every 1–2 hours), can be titrated to produce a mild state of sedation. Longer-acting BZDs, such as chlordiazepoxide, have the advantage of being self-tapering but may also accumulate in the presence of significant liver impairment (Greenblatt et al. 1978). BZD accumulation may, in turn, lead to a delirium that can be indistinguishable from the original presentation.

The use of antipsychotic medications, usually with low or no anticholinergic activity (e.g., haloperidol), can be used for severe hallucinations not responding to BZDs or for severe aggression and agitation. Central α_2 adrenergic agonists such as clonidine or a beta-blocker such as metoprolol can be used for hypertension or tachycardia if autonomic symptoms are prominent. All these medications are capable of causing toxicity (Battaglia et al. 1997). Given the potential lethality of alcohol withdrawal, caution should be exercised to avoid overmedication but not to the point of risking undertreatment.

The common practice of hydrating patients and providing them with thiamine and folic acid has helped to decrease long-term functional and neurological consequences of alcohol dependence, such as Wernicke's encephalopathy and Wernicke-Korsakoff syndrome. Hence, they continue to be essential in the treatment.

Emergency in case of cognitively impaired patient: dementia

Dementia

Dementia is a syndrome of global cognitive impairment that, according to the DSM-IV-TR definition, must include anterograde and/or retrograde amnesia and at least one other area of cognitive dysfunction, such as aphasia, apraxia, agnosia, or executive dysfunctions. Dementia presents with full alertness, which is crucial in distinguishing dementia from delirium, with which it is frequently comorbid. Most dementia syndromes have an insidious onset and a course characterized by slow progression, but the physician must bear in mind that this course, although prototypical for dementia and common in the majority of cases, is not uniform (Engel and Romano 2004). Acute presentation of a large decrement in cognitive function may result from a critically located CNS lesion (e.g., a dominant-hemisphere middle cerebral artery cerebrovascular accident [CVA] in a case of poststroke vascular dementia) (Romón 2002).

Dementia syndromes may be quite rapidly progressive (e.g., Creutzfeldt-Jakob disease) or may be somewhat reversible with clinical intervention (e.g., hypothyroidism, vitamin B12 deficiency) (Boeve 2006; Engel and Romano 2004).

The distinction between dementia and delirium, while a crucial clinical concept, is in some ways a false dichotomy in clinical practice, because previously undiagnosed dementia patients will often present with delirium simultaneously. Dementia is the most tangible and important risk factor for the later development of delirium. Many patients will experience several episodes of delirium during the tragic course of a degenerative dementia. In addition, dementia is associated with a range of other psychiatric comorbid conditions that episodically may dominate (and in a sense even define) the clinical picture. Mood disorders, most commonly depressive states, are very common in patients with dementia (Lyketsos et al. 2002; Robert et al. 2005). A patient who is acutely significantly depressed and chronically mildly demented may well present to the emergency room with depressed mood, neurovegetative signs, and even suicidal crisis, even though the underlying psychiatric illness is dementia. Many patients with comorbid dementia and depression will experience an episode of depression more in the cognitive realm (e.g., decreased memory or concentration) than in the emotional realm, and may interpret their clinical situation as one of increasing cognitive impairment, likely triggering even more seriously depressed mood, setting up a vicious cycle. Even more disruptive, and leading to many emergency presentations of dementia patients, is the pernicious relationship between dementia and psychosis. Common comorbid psychotic symptoms in dementia include delusions, particularly paranoid delusions, and hallucinations (Leverenz and McKeith 2002). The delusions in dementia may be a defensive attempt to "cover up" cognitive impairment. For example, the patient who has lost a valued object because of cognitive impairment may instead believe that a family member has stolen the object. Indeed, the onset of psychotic symptoms in a patient with dementia is both disruptive and dangerous to the patient and the family, and is a common context of emergency presentation (Robert et al. 2005).

Therefore, the differential diagnosis of acute psychosis must necessarily include a rule-out of dementia syndromes. Less frequently, a dementia patient may present to the emergency room with an episode of comorbid acute hypomania or mania (Romón 2002).

Dementia patients may present with the phenomenon of sundowning, wherein the patient develops increased confusion and motor agitation in the evening and at night. These patients may or may not meet criteria for an episode of comorbid delirium for these episodes; nonetheless, these

patients can become very dangerous and unsafe to manage at home or in noncontrolled living situations.

Finally, the emergency presentation of dementia patients may be due to social factors rather than clinical ones. Patients with mild to moderate dementia can usually live in the community, if they have adequate supervision and the provision of basic needs by helpful others. When a support person is ill or dies, however, the now-unsupervised dementia patient may be brought to the emergency department solely because of the inability to care for himself or herself. The clinician should routinely inquire into the stability of the social system, especially the loss of primary support figures, in the timing of emergency presentation of a patient with dementia.

Emergency in case of cognitively impaired patient: amnesic disorders

Amnesic Disorders

Amnesic disorders may occur in “isolation” in a few specific circumstances (e.g., transient global amnesia, Korsakoff syndrome, carbon monoxide poisoning). The hallmark of these interesting disorders is the focal deficit in declarative or semantic memory (i.e., memory for facts as opposed to learned motor acts). According to the international classification, other cortical deficits (as in dementia) or any changes in circadian rhythm, level of consciousness, or attention (as in delirium) are absent. The memory deficit may be anterograde (an inability to learn new semantic material), retrograde (an inability to recall previously learned material), or a combination of both. Some of the amnesic disorders may have an acute onset; because they are very disruptive to the patient’s functioning, they are likely to lead to the need for emergency assessment. In addition to the amnesic disorders specified among the cognitive disorders, dissociative amnesia (anterograde and/or retrograde amnesia following a psychosocial stressor) may phenomenologically resemble the other amnesic disorders; because of its likelihood of psychosocial disruption, it may also present emergently.

Transient Global Amnesia

Transient global amnesia is an acute-onset global amnesia that is reversible. It usually occurs in middle-aged patients with no prior psychiatric history. Other aspects of cognitive function are unimpaired. The cause is unclear but may be a temporary disturbance in temporal lobe function. Because of its precipitously acute onset and the preservation of other cognitive function, transient global amnesia is very disturbing to the patient and often leads to an emergency presentation. Full workup, including neuroimaging and assessment for vascular disease, is needed. Whether these patients have increased risk for cognitive impairment in the future is unclear.

Korsakoff Syndrome

Korsakoff syndrome is a usually acute-onset amnesic disorder in the context of alcohol dependence. It is attributed to thiamine deficiency. It may occur in isolation or as part of a larger picture of alcohol dementia. It is treated with intravenously administered thiamine and subsequent nutritional supplementation.

PSYCHIATRIC EMERGENCY IN CASE OF TWILIGHT STATE

The twilight state is a particular psychotic syndrome, which has a sudden onset and resolution. The consciousness disturbances, by the way, severe during this condition (loss of clearness of consciousness, of the adequate orientation in reality, loss of thought capacity to differentiate the subjective from objective and fiction from reality, loss of possibility to conform to

social rules and values) are associated with an automatic activity, with motor coherent and coordinated acts. The behavior, although coherent in general, it is influenced by the hallucinatory-delirious phenomenology, oneiroid nature and abnormal affective conditions (anxiety, dysphoria, nostalgia, anger).

The etiology could be pretty various: epileptic, affective (psychotic reactions in disasters), puerperal (postpartum psychosis), in evolution of an acute psychosis (acute delirium), in impaired conditions (dementia), in Korsakoff's syndrome, in different intoxications (CO, barbiturates, other substances), in strokes, in head trauma, epilepsy etc. During the twilight conditions, the patients can commit aggressive acts of a remarkable violence and cruelty.

The twilight state is characterized by narrowing of thought capability, this way, it seems that it exist just one tendency, while the rest of personality if it is in contradiction, do not exist. During these conditions, the behavior is in general pretty much coherent, but simultaneous to his coherent actions could commit unexpected and often violent actions. In general, in behavioral aspect, the patient's behavior appears determined by a mixture of lived or hallucinatory-delirious events, and they are perceived as being in a dreamlike state or as in a fictive reality. Thus, the patient cannot differentiate the subjective from objective, it's like his imaginary world is projected into the reality, as if fiction became reality. Due to psychotic nature, the patient's behavior can be characterized by sudden, illogical, and sometimes violent actions, the patients being possessed by abnormal affective conditions (anxiety, dysphoria) or by delusions (persecution, grandiose). The patients seem absent, or agitated or apathetic, but it is possible, that evident behavioral disorders to be absent. Patients with such psychiatric disturbances can commit aggressive actions with high violence and cruelty, followed by lacunar or total amnesia.

As types of disturbance of consciousness of twilight state can be listed: vigilambulism, somnambulism, and pathological fugue (twilight-like).

In vigilambulism, although consciousness is deeply impaired, the coordination and motor coherence is preserved, thus, patients can make trips sometimes pretty long ones, and sometimes actions more or less complex, followed by a lacunar amnesia of the episode. Vigilambulism can represent an epileptic psychomotor seizure or can follow a major epileptic seizure.

Pathological twilight fugue is characterized by an intense affective tension; the clinical futures being characterized by a disorganized fugue, with an impossibility to control their actions and avoidance of dangerous conditions. It is found in epilepsy and in pathological affect condition (anticipated by acute psycho-traumatizing situations).

Somnambulism is a condition in which consciousness is impaired, which has it's onset during the night; being characterized by motor automate actions, complex ones, with performed at a higher level/ better then during vigilance state.

Treatment

This conditions should be managed with an etiological approach, but as a symptomatic treatment it will be administered:

1. Sol. Clorpromazini 2,0 i.m.
2. Sol. Diazepami 2,0 i.m.

PSYCHIATRIC EMERGENCY IN CASE OF STATUS EPILEPTICUS

Status epilepticus it is characterized by a frequent succession of epileptic seizures, with an interval between the seizures in most cases so short that the patient usually do not regain consciousness.

Status epilepticus – grand mal

This is a classic status epilepticus and it is characterized by onset of succession of generalized tonico-clonic epileptic seizures, with coma between the seizures, severe vegetative dysfunctions, fever, poor prognosis if it will not be any therapeutic help in reasonable time. It can occur at any age, with a higher rate between age 20 and 60, with prevalence in man. Status grand mal is about frequent generalized tonico-clonic seizures, with a total average of duration of 24-48 hours. The seizures reappear every 2-6 hours, with a state of coma between the seizures. The grand mal seizures from a status epilepticus can be differentiated from a singular seizure only by the duration of the seizure (in average 1-3 minutes) and by a longer period of tonic phase with a shorter clonic phase. During the evolution of grand mal status, the clonic phase can get shorter and shorter till totally disappear, status in that moment being a tonic one. In every case, the tonic phase of short duration after seizure, which is seen in singular grand mal seizures, disappear. The vegetative disturbances gradually appear, being as severity factor, which puts the patients life in danger. Thus, arterial hypertension, apnea during the tonic phase of seizures, followed by polypnea, tachycardia and tracheo-bronchial hypersecretion are the main vegetative disturbances that are responsible for death. In the post-seizure phase, the state of coma is at different depth and it is followed by different vegetative disturbances. In some cases of prolonged status, can appear arterial hypotension or even a state of collapse. Tachycardia from the seizure phase can continue in the period between the seizures. Can occur disturbances of cardiac rhythm. The reach tracheo-bronchial and salivary secretions can generate a relative obstructive respiratory syndrome, with cyanosis, and sometimes with acute pulmonary edema. After the cessation of tonico-clonic seizures, the state of coma persists for a variable period of time, from 12 to 24 hours, being “masked” by the big amount of administered barbiturate drugs. Step by step, the vegetative disturbances will be reduced and the patient will regain his consciousness, passing through a confusional phase associated with agitation. Death can occur during the grand mal seizures, due to circulatory collapse or respiratory arrest. In other cases death occurs a few days after resolution of status, due to severe cardio-circulatory disturbances or due to liver or renal failure. Grand mal type of status epilepticus usually occurs in elderly epileptics, with encephalopathy or mentally retarded patients.

Petit mal status

It is found pretty rare. It occurs in child and more rare in adults. The symptoms from petit mal status are characterized by disturbances of consciousness in the first place, with different intensity. Can occur a simple slowdown in ideation or a slowdown in execution orders, states of immobility and impossibility to execute any voluntary or automated action, disorientation in time and place, state of drowsiness, of obnubilation or stupor till lethargy. Can be found disturbance of perception, ideation, memory, attention, intellect, praxis, and gnosis. The petit mal status can be also characterized by little myoclonus (facial or eyelid), but also by complex automatism, even fugue epileptic (although rare), considered often as temporal epileptic automatism or twilight psychotic state. Could be also together with generalized convulsive seizures. This kind of epileptic status can persist from a few hours to 3-4 weeks, and appears as usual before age 20. Petit mal status can finish with a grand mal seizure, the amnesia of the actions during the status period is variable, it is correlated with the severity of the consciousness disturbances.

First aid

The treatment of epileptic status it's done in optimal conditions in intensive care unit, the presence of an intensive care doctor (resuscitator/ anesthesiologist) being of a big help. The patient is monitored for a confusional state after the seizures; the dosage of the drugs that can decrease the convulsive threshold are reduced or totally excluded. The patient is placed in protected conditions, immobilized, in supine position, with the head in a lateral position with a little extension. As needed, for maintaining the permeability of the respiratory pathways, a cannula is used, we aspirate

the secretions and we assure the assisted ventilation. We catheterize a vein for taking blood analysis (sometimes necessary for diagnose) and for emergency administration of drugs.

Status Epilepticus

- ♦ A medical emergency
 - Adverse consequences can include hypoxia, hypotension, acidosis and hyperthermia
 - Know the recommended sequential protocol for treatment with benzodiazepines, phenytoin, and barbiturates.
 - Goal: stop seizures as soon as possible

Status Epilepticus Treatment	
Time post onset	Treatment
Onset	Ensure adequate ventilation/O ₂
2-3 min.	IV line with NS, rapid assessment, blood draw
4-5 min.	Lorazepam 4 mg (0.1 mg/kg) or diazepam 10 mg (0.2 mg/kg) over 2 minutes via second IV line or rectal diazepam
7-8 min.	Thiamine 100 mg, 50% glucose 25 mg IV Phenytoin or fosphenytoin 20 mg/kg IV(phenytoin PE) at ≤ 50 mg/per minute Phenytoin or 150 mg per minute fosphenytoin (≤ 0.75 mg/kg/min) Pyridoxine 100-200 mg IV in children under 18 month
10 min.	Can repeat lorazepam or diazepam if seizures ongoing
30-60 min.	EEG monitoring unless status ended and patient waking up
40 min.	Phenobarbital 20 mg/kg at ≤ 5 mg per minute (0.75 mg/kg per minute)
70 min.	Pentobarbital 3-5 mg/kg load, 1 mg/kg per hour infusion, increase to burst-suppression OR Propofol 3-5 mg/kg load, 5-10 mg/kg/hr initial infusion then 103 mg/kg/hr OR Midazolam 0.2 mg/kg load, .25-2 mg/kg infusion
Reference: Lowenstein DH, Alldredge BK, Status Epilepticus. NEJM 1998; 338: 970-976.	

First Aid Tonic-Clonic Seizure

Turn person on side with face turned toward ground to keep airway clear, protect from nearby hazards

- ♦ Transfer to hospital needed for:
 - Multiple seizures or status epilepticus
 - Person is pregnant, injured, diabetic
 - New onset seizures
- ♦ DO NOT put any object in mouth or restrain

Treatment

The first step in treatment of cognitive impairment is the management of systemic factors, as guided by the results of physical examination, laboratory, and imaging results. To treat behavioral symptoms, a range of psychotropic medications are now in common use. Antipsychotics, both typical and atypical, are now standard in emergency care (Carson et al. 2006; Kile et al. 2005; Lacasse et al. 2006; Meagher 2001; Tune 2001; Weber et al. 2004). Most commonly used in emergency settings are the typical antipsychotic haloperidol (most other typical antipsychotics are rarely used in the emergency setting) and several atypical antipsychotics.

Due to their sedative/hypnotic properties, benzodiazepines alone should be used for delirium due to alcohol or sedative-hypnotic withdrawal, which are often associated with signs of autonomic hyperarousal. Benzodiazepines are often combined with typical antipsychotics or atypical antipsychotics for the management of delirium due to other causes (Meagher 2001). They should be used with caution, however, because they may exacerbate many cases of delirium and may increase cognitive impairment in dementia. The most important difference among benzodiazepines is in their pharmacokinetic properties— short-half-life agents will work more quickly but require more frequent dosing than long-half-life agents.

Although less frequently used in the emergency setting to treat patients with cognitive impairment, other agents are sometimes useful. Anticonvulsants may be used in a supplemental fashion to control agitation. One useful agent is Depacon, an intravenous form of valproate. It can be loaded at 15–20 mg/kg/day with monitoring of liver function, platelets, serum ammonia, and valproate serum levels (Kile et al. 2005). If anticholinergic toxicity is confirmed and/or if a history of premonitory dementia can be established, early use of cholinesterase inhibitors (donepezil, rivastigmine, or galantamine) may be initiated (Coulson et al. 2002). Finally, in cases of cognitive impairment with dangerous agitation, anesthetic agents such as propofol can be used emergently for a brief period, but the patient receiving this agent must be in an intensive care unit, receiving close clinical observation and airway management.

An important consideration is that medications used to control agitation in a patient with cognitive impairment also risk contributing to delirium, thereby worsening the patient's cognitive functioning. Therefore, medications should be used cautiously, and the minimum effective dose should be used, especially in elderly patients.

Key Clinical Points

- Cognitive disorders are among the most common categories of psychiatric illness in the emergency department setting.
- Patients with cognitive impairment may present with various behavioral symptoms (e.g., psychosis, agitation, violence) in the emergency department.
- Cognitive disorders are an important part of the differential diagnosis of the presentation of agitated states.
- The “smoke” of delirium often leads to the discovery of the “fire” of dementia.
- Workup of the agitated patient with cognitive impairment requires neuroimaging, clinical laboratory, and physical assessment.
- Acute management of the patient with cognitive impairment may require typical antipsychotics, atypical antipsychotics, benzodiazepines, and other sedatives; chronic management requires the use of many classes of psychopharmacology.
- Thorough mental status examination and quantitative cognitive assessment are required for initial workup and serial assessments.
- Emergency department presentation of cognitive impairment is more often due to psychosis, agitation, and disruption in

Child and Adolescent Emergency Psychiatry

Although children and adolescents present to the emergency department for various reasons, some of the most common are suicidality; psychosis, agitation, or aggressiveness; child abuse; and eating disorders. We discuss these more common psychiatric issues in this section.

Emergency in case of child suicidal behavior

Assessment

Once safety has been established, the patient should be evaluated for suicidal ideation. In contrast to suicidal adults, suicidal adolescents account for a higher proportion of all deaths, suicidal ideation is more common, suicidal attempts are more common, disruptive behavior disorders increase risk, and contagion effects are more powerful (Ash 2008). According to epidemiological and clinical studies, risk factors for suicidality in children and adolescents are often comorbid with other psychiatric disorders, such as depressive, disruptive, anxiety, or substance abuse disorders. Other risk factors include adverse family circumstances, such as the caretaker's low satisfaction with the family environment, low parental monitoring, and parental history of psychiatric disorder. Low social and instrumental competence, which are thought to undermine self-esteem and hinder the development of supportive social affiliations, was found to be associated with suicidal ideation or behavior (King et al. 2001). Evaluation of the child's home environment and the parents' or caretakers' capacity to support an at-risk child must be considered, especially as the evaluation moves toward a disposition. The clinician should keep in mind the suicide rates among adolescents while evaluating risk. Although completed suicide is known to be a rare event in preteen children, the risk begins to increase at age 13 years, and by the end of adolescence, the rates are similar to those of young adults. Girls make more frequent attempts than boys, but boys are more likely to successfully complete suicide. The suicide rate for children and adolescents has remained fairly stable, 9.48 to 6.78 per 100,000 persons between 1990 and 2003, with a recent upward trend of 8% to 7.32 per 100,000 persons by 2004 (Centers for Disease Control and Prevention 2007).

Interventions

The clinician needs to spend time educating the family and the patient about suicide, suicide prevention, and mental illness. It is important to listen carefully, reflect back concerns, and be sure the patient and his or her parents or caretakers fully understand everything the clinician wishes to convey. If the patient's suicidal gesture seemed to be a cry for help, he or she may not require further hospitalization but rather close follow-up with an outpatient clinician. This determination should be based on the individual case, the resources available, the willingness of the family to engage in treatment, and other considerations. For a youngster who has made an apparent nonlethal suicide attempt or who has passive suicidal ideation, further exploration of the home environment is essential to determining where the patient will be safest. Alternative placements may be necessary if the parents are unable to adequately monitor the youngster; are known to be dangerous or to abuse alcohol or substances; do not fully comprehend the discharge instructions; or are considered by the youngster to be significant enough stressors that his or her safety at home cannot be guaranteed. If the patient's safety at home is in any way in doubt, the first option is to find other family members who may be willing and able to take the child temporarily. If this is not possible, the child should be admitted until appropriate placement can be arranged in a residential crisis center, with a foster care agency, or with a similar social service agency. In the psychiatric emergency service, because the patient is not likely to be seen again, antidepressants are not typically started.

Disposition

From what is learned about the patient in the emergency department, the clinician determines the next level of care. Possibilities include inpatient hospitalization; hospital emergency room-based services (crisis intervention); stepdown programs such as a day treatment program, home-based crisis intervention, or intensive case management intervention; standard outpatient care; or no follow-up at all. Another option is to contact child protective services or another social service agency.

Emergency in case of psychosis, agitation, or aggressiveness

Assessment

For the child or adolescent who presents with psychosis, agitation, or aggressiveness, the clinician needs to consider several questions.

1. Does the patient have accompanying symptoms suggestive of a psychiatric disorder or of a medical or neurological disorder? The clinician should attempt to rule out any possibly reversible cause of the mental status change (e.g., pain, infection, confused state from the infection, partial complex seizures, toxic states, medication intoxication/withdrawal syndromes).
2. Is the behavior volitional or done for secondary gain?
3. Is the behavior secondary to fear or anxiety, or is it in anticipation of hospitalization?
4. What is the patient's cognitive level? Some children with developmental disabilities appear to be agitated when in fact their behavior is a reflection of a soothing strategy or a slight exacerbation of baseline stereotypes.
5. Does the patient have hallucinations? It is vital to consider the difference between developmentally appropriate (primary) hallucinations and hallucinations in the presence of psychiatric disorders. Aug and Ables (1971) listed five factors that may predispose a child to experience so-called primary hallucinations in the absence of any diagnosable disease or disorder:
 - Age and limited intelligence are important factors. For a child, wishfulfilling fantasy is a common mode of thinking. However, a child of average intelligence at age 3 years can usually distinguish between fantasy and reality.
 - Emotional deprivation can lead to increased fantasy thinking, and perhaps hallucinations, as a way of providing the gratifications that reality cannot provide.
 - Emphasis on a particular mode of perception may be important. Life experience may make it difficult to distinguish between vivid auditory imagery and auditory hallucinations in a child who is partially deaf or between visual imagery and visual hallucinations in a child whose parent is preoccupied about the health of the eyes.
 - Family religious and/or cultural beliefs may predispose children to have deviant perceptual experiences.
 - Strong emotional states at times of stress may lead to regression, hallucinations, and/or dissociative states. Primary hallucinations include the following:
 - Hypnagogic hallucinations (transient, occur between true sleep and waking)
 - Eidetic imagery (child's ability to visualize or auditorize an object long after it has been seen or heard; an ability typically lost by the time of puberty in a child with no developmental delays or history of trauma)
 - Imaginary playmate (typical for children 3–5 years of age, and the child is aware that this companion is fantasy or not real)
 - Dreams, nightmares
 - Isolated hallucinations (fleeting illusions based on misinterpretations of shadows, colors, and movements)
 - Hallucinosis (a number of hallucinations extending over a period of time but not related to any known cause)

To determine whether the patient has a secondary hallucination suggestive of a psychiatric or medical etiology, the clinician should consider the full context of the patient's presentation (Weiner 1961). Primary mood or psychotic disorders should be considered if the patient also presents with severe mood symptoms, either depressed or manic; if the patient's affect is incongruent, flattened, blunted, or grandiose; or if the patient has impaired memory, agitation, restlessness, a disturbed sleep-wake cycle, or disturbances of memory, attention, or concentration.. If the patient's hallucinations are accompanied by perceptual distortions, automatic and repetitive movements, partial loss of consciousness, or periods of confusion, or if they are preceded by a visual aura, then a primary neurological condition such as epilepsy or migraines should be considered.

Intervention

Because safety is of primary importance, the clinician should first deescalate the environment. If possible, familiar persons should remain nearby, and the child should be provided with food, fluids, and diversionary activities such as toys, games, or drawing materials.

When working with a cognitively limited patient who is verbally and physically aggressive, the clinician should try to ignore the patient (e.g., by avoiding eye contact, verbal responses, and touching). If the patient approaches a staff member while engaging in aggressive or disruptive behaviors, the staff member should move far away from the patient to limit interaction. However, the staff member must take immediate action if the situation is potentially dangerous to the patient or anybody else. If the patient remains agitated, the clinician should consider one of the medications listed in Table 1.

Name	Dose	Onset of action	Elimination half-life (hours)
Lorazepam	0.25–2 mg po or im q 6–8 hours prn (maximum 2–3 doses in 24 hours)	im: 20–30 minutes po: 30–60 minutes	Children: 11 Adults: 13
Clorpromazine	10–50 po or 12.5–25 im q 2–4 hours prn (maximum 2–3 doses in 24 hours)	im: 15 minutes po: 30–60 minutes	30
Haloperidol	0.25–5 mg po or im q 2–4 hours prn (maximum 2–3 doses in 24 hours)	im: 20–30 minutes po: 2 – 3 hours	18-40
Risperidon	0.125–2 mg po q 4–6 hours prn (maximum 2–3 doses in 24 hours)	im: 1–3 hours	20
Benztropin	0.25–2 mg po or im q 6–8 hours prn (maximum 2–3 doses in 24 hours)	im: ≤15 minutes po: ≤1 hours	6 - 48
Diphenhydramine	12.5–50 mg po or im q 4–6 hours prn (maximum 2–3 doses in 24 hours)	im: ≤ 2 hours po: 2 - 4 hours	2 - 8

Haloperidol and lorazepam

For extreme agitation, to achieve a higher level of sedation

Haloperidol, lorazepam and benztropine or diphenhydramine

For extreme agitation, to achieve a higher level of sedation and to prevent extrapyramidal symptoms

Haloperidol and diphenhydramine

To achieve a higher level of sedation and to prevent extrapyramidal symptoms (EPS) To prevent or if patient develops EPS, provide oral dosage of diphenhydramine q 6–8 hours to cover up to 48 hours postexposure to one single dose of haloperidol.

Haloperidol and benztropine

To prevent EPS. To prevent or if patient develops EPS, provide oral dosage of benztropine q 8–12 hours to cover up to 48 hours postexposure to one single dose of haloperidol.

Chlorpromazine is associated with orthostatic hypotension and cardiovascular collapse; use carefully and do not use in combination with diphenhydramine or benztropine.

Lorazepam is associated with respiratory depression; use carefully if pulmonary functions are compromised. Also, lorazepam is associated with paradoxical reactions (increased agitation) in small children and developmentally disabled children.

Other anxiolytic or antipsychotic medications

If patient is already receiving them with good results, you might consider giving an extra dose.

The following considerations should be taken into account in choosing medications:

- Other psychoactive medications or substances that the patient currently is receiving or has ever received
- The possible effect of psychotropic medication on the patient's medical illness
- Comorbid symptoms
- Route of administration
- Potential side effects and the patient's risk factors
- Desired rapidity of effect
- Dosing

The following important guidelines should also be followed:

- Do *not* order prn medications without physician reevaluation.
- Do *not* mix different types or classes of antipsychotic medications.
- Do *not* mix different types of benzodiazepines.

At times, restraints may be considered for patients who are psychotic, agitated, or aggressive. The use of restraints should be limited, however, to cases in which all interventions have failed and should be considered only temporary until an adequate level of behavioral control is gained by the patient.

Disposition

Any patient who presents with symptoms suggestive of a prodromal psychotic state, first-break psychosis, or exacerbation of psychotic symptoms that were previously well controlled should be hospitalized for safety, further evaluation, and management of symptoms. On occasion, some patients may present with mild psychotic symptoms that could be safely managed at home. If the family is able to provide appropriate supervision and outpatient follow-up, the home environment may be preferable. Patients with new presentations of mood, anxiety, or disruptive behavior disorders should be assessed for safety as previously described and the most appropriate level of care determined for disposition. Patients with developmental disabilities, however, do not respond well to changes in their environment and/or caretakers. The presence of a familiar caretaker at the point of arrival at the emergency room very often deescalates the patient's agitation by quickly reestablishing known routines. If the agitation is quickly controlled, the patient can be discharged home and hospitalization is avoided. The emergency services psychiatrist should be familiar with resources available for patients with developmental disabilities, and applications for external supports at school and home should be initiated at this point. Inpatient hospitalization should be used only as a last resort unless a unit with specialized interventions for children with disabilities is available. Specific therapeutic interventions catering to this population are limited

or lacking in regular psychiatric units, and these patients, due to their behavioral difficulties, are too often isolated and overmedicated in this setting.

Emergency in case of child abuse

Child Abuse

Any behavior that harms the physical or psychological well-being or the normal growth and development of a child by an adult is considered child abuse. There are no specific ethnic or socioeconomic groups in which child abuse is more prevalent. Because child abuse typically occurs in the context of a family crisis, the clinician should be suspicious of the nature of the child's emergency but work hard to establish rapport with both the child and the parents, without demonstrating outwardly any preconceived thoughts or attitudes. A strong alliance will help the child to reveal sensitive information. Additionally, maintaining a professional stance will help if the intervention requires removal of the child from the family to the protective environment of an inpatient unit or other social service until details are evaluated.

Types of Child Abuse

Child neglect. Child neglect is generally characterized by omissions in care that result in significant harm or risk of significant harm. Neglect is frequently defined in terms of a failure to provide for the child's basic needs, such as adequate food, clothing, shelter, supervision, or medical care. Typically, child neglect is divided into three types: physical, educational, and emotional neglect.

Sexual abuse. Sexual abuse includes both touching offenses (fondling or sexual intercourse) and nontouching offenses (exposing a child to pornographic materials) and can involve varying degrees of violence and emotional trauma. The most commonly reported cases involve incest, or sexual abuse occurring among family members, including those in biological families, adoptive families, and stepfamilies. Incest most often occurs within a fatherdaughter relationship; however, mother-son, father-son, and sibling-sibling incest also occurs. Other relatives or caretakers also sometimes commit sexual abuse.

Physical abuse. Although an injury resulting from physical abuse is not accidental, the parent or caregiver may not have intended to hurt the child. The injury may have resulted from severe discipline, including injurious spanking, or physical punishment that is inappropriate to the child's age or condition. The injury may be the result of a single episode or repeated episodes and can range in severity from minor marks and bruising to death.

Psychological maltreatment. Psychological maltreatment, or emotional abuse, is defined as "a repeated pattern of caregiver behavior or extreme incident(s) that convey to children that they are worthless, flawed, unloved, unwanted, endangered, or only of value in meeting another's needs." There are six categories of psychological maltreatment:

- Spurning (e.g., belittling, hostile rejecting, ridiculing)
- Terrorizing (e.g., threatening violence against a child, placing a child in a recognizably dangerous situation)
- Isolating (e.g., confining the child, placing unreasonable limitations on the child's freedom of movement, restricting the child from social interactions)
- Exploiting or corrupting (e.g., modeling antisocial behavior such as criminal activities, encouraging prostitution, permitting substance abuse)
- Denying emotional responsiveness (e.g., ignoring the child's attempts to interact, failing to express affection)

- Mental health, medical, and educational neglect (e.g., refusing to allow or failing to provide treatment for serious mental health or medical problems, ignoring the need for services for serious educational needs)

Evaluation

The patient's mental status examination may reveal a frightened youngster who may have unrealistic expectations about reunions with an abusive family or family member, or who may describe magical thinking about undoing the abuse. The child or adolescent may present in a variety of ways, such as being overly responsible, being impulsive, displaying extreme mood swings, misunderstanding personal boundaries, or being shy or withdrawn. The younger patient may experience nightmares or night terrors, and may be extra clingy with one person but refuse to be near another. Older children, especially adolescents, may become more withdrawn, change their clothing style to one that is more sexually provocative, or make efforts to hide their sexual development and attractiveness. The older child may also develop promiscuous behaviors or deviant sexual behaviors, run away, develop alcohol or substance abuse problems, or attempt suicide. A child who is a suspected victim of abuse should be examined carefully by a pediatrician in the medical emergency department for signs of abuse. Labs, cultures, swabs, and imaging studies may be warranted to substantiate clinical findings.

Intervention

As always, in working with potential abuse victims, the clinician should maintain a professional stance, which requires being sensitive, thoughtful, empathetic, objective, and goal and action oriented. Child abuse cases may bring up strong countertransference feelings in the clinician, who may feel anger toward the alleged offender and sympathy for the victim; however, the clinician must refrain from being confrontational or accusatory, and maintain a sense of calm and safety within the emergency department. The clinician should learn from both the patient and the patient's parents or caretakers the details of the alleged abuse and then consult with other members of the psychosocial team, hospital child abuse assessment team, or other supervisors to determine appropriate disposition.

Emergency in case of eating disorders to children

Eating Disorders

Some of the more common presentations of anorexia nervosa to the emergency room include recent dizziness or fainting spells in school or at home or seizures; when the parent or caregiver is highly suspicious of an eating disorder after the patient is observed vomiting (and may also complain of a gastrointestinal illness); or when the parent or caregiver notes that the patient is dangerously restricting intake. A 2008 study found that about 16.9% of those with anorexia nervosa attempted suicide (Bulik et al. 2008). For the emergency psychiatrist, the question of whether to admit a patient with an eating disorder to either a medical unit or a psychiatric unit will be based on the available resources in the clinician's hospital. Following completion of a full physical and psychiatric evaluation, including a necessary evaluation of the family, inpatient medical hospitalization is warranted if any one of the following criteria is met:

- $\leq 75\%$ of ideal body weight (patient in gown after voiding)
- Heart rate < 45 bpm, resting by lying down for at least 5 minutes
- Hypokalemia (on evaluation of plasma electrolytes)
- Hyponatremia (on evaluation of plasma electrolytes)

Given the significantly high suicide rate for patients with anorexia nervosa, some of their presentations will be similar to those of other psychiatric patients who require immediate hospitalization for stabilization and safety (American Psychiatric Association 2006):

- Severe suicidality with high lethality or intention (which under any circumstances warrants hospitalization).
- Worsening ability to control self-induced vomiting, increased binge eating, use of diuretics, and use of cathartics that may be considered life threatening.
- Weight changes related to altered or changed mental status due to worsening symptoms of mood disorder, suicidality, or psychotic decompensation.
- Preoccupation with weight and/or body image, accompanied by food refusal, or obsessive thoughts about body image or weight that cause the patient to be uncooperative with treatment and require a highly structured setting for rehabilitation.

Other presentations may not warrant inpatient hospitalization depending on the entire clinical picture and full psychiatric evaluation (American Psychiatric Association 2006):

- Recent precipitous or steady drop in weight and/or a total body weight that is <85% of normal healthy body weight. Body mass index (BMI; calculated as [weight in kilograms/height in meters]²), is less useful in children than adults and should not be used to estimate, except at extremes, a patient's nutritional status. Age-adjusted BMIs are available (Centers for Disease Control and Prevention 2006). Children below the 5th percentile are considered underweight. However, other factors, such as abnormal muscularity, body frame status, constipation, and fluid loading, will influence these results and may be misleading. Additionally, specific individual BMIs may be better understood according to ethnic groups (Lear et al. 2003).
- Metabolic disturbances, including hypophosphatemia, hyponatremia, hypokalemia, or hypomagnesemia; elevated blood urea nitrogen in context of normal renal function.
- Hemodynamic disturbances in children and adolescents: heart rate in the 40s; orthostatic changes (>20 bpm increase in heart rate or >10–20 mm Hg drop); blood pressure below 80/50 mm Hg.

Key Clinical Points

- Temporary safety is the chief goal of emergency evaluation.
- Any intervention considered should be appropriate to establish and maintain the safety of the patient.
- Assessment tests, procedures, and interventions should be efficient, practical, and useful for establishing the primacy of medical versus psychiatric conditions.
- Acute agitation should be managed first with environmental deescalation, before medications or physical restraints are used.
- Acute crisis intervention requires the clinician to maintain a professional stance, while demonstrating empathy, actively listening, and appropriately delivering education and instructions.
- Provisional psychopharmacological management should be attempted for patients with acute behavioral dyscontrol, agitation, aggressiveness, or psychosis.
- With children, especially those who are naive to psychotropic medications, medications should be used only if necessary, starting with low doses.

Medication-Induced Movement Disorders

I. General Introduction

The typical antipsychotic drugs are associated with a number of uncomfortable and potentially serious neurological adverse effects. The drugs act by blocking the binding of dopamine to the dopamine receptors involved in the control of both voluntary and involuntary movements. The newer antipsychotics, the serotonin-dopamine antagonists, block binding to dopamine receptors to a much lesser degree and thereby, are less likely to produce such movement disorders. The movement disorders include:

- (1) Neuroleptic-Induced Parkinsonism
- (2) Neuroleptic-Induced Acute Dystonia
- (3) Neuroleptic-Induced Acute Akathisia

- (4) Neuroleptic-Induced Tardive Dyskinesia
- (5) Neuroleptic Malignant Syndrome
- (6) Medication-Induced Postural Tremor

II. Neuroleptic-Induced Parkinsonism

A. Diagnosis, signs, and symptoms. Symptoms include muscle stiffness (lead pipe rigidity), cogwheel rigidity, shuffling gait, stooped posture, and drooling. The pill-rolling tremor of idiopathic parkinsonism is rare, but a regular, coarse tremor similar to essential tremor may be present. The so-called rabbit syndrome is a tremor affecting the lips and perioral muscles and is another parkinsonian effect seen with antipsychotics, although perioral tremor is more likely than other tremors to occur late in the course of treatment.

B. Epidemiology. Parkinsonian adverse effects occur in about 15% of patients who are treated with antipsychotics, usually within 5 to 90 days of the initiation of treatment. Patients who are elderly and female are at the highest risk for neuroleptic-induced parkinsonism, although the disorder can occur at all ages.

C. Etiology. Caused by the blockade of dopamine type 2 (D₂) receptors in the caudate at the termination of the nigrostriatal dopamine neurons. All antipsychotics can cause the symptoms, especially high-potency drugs with low levels of anticholinergic activity (e.g., trifluoperazine [Stelazine]). Chlorpromazine (Thorazine) and thioridazine (Mellaril) are not likely to be involved. The newer, atypical antipsychotics (e.g., aripiprazole [Abilify], olanzapine [Zyprexa], and quetiapine [Seroquel]) are less likely to cause parkinsonism.

D. Differential diagnosis. Includes idiopathic parkinsonism, other organic causes of parkinsonism, and depression, which can also be associated with parkinsonian symptoms.

E. Treatment. Can be treated with anticholinergic agents, benztropine (Cogentin), amantadine (Symmetrel), or diphenhydramine (Benadryl). Anticholinergics should be withdrawn after 4 to 6 weeks to assess whether tolerance to the parkinsonian effects has developed: about half of patients with neuroleptic-induced parkinsonism require continued treatment. Even after the antipsychotics are withdrawn, parkinsonian symptoms may last for up to 2 weeks and even up to 3 months in elderly patients. With such patients, the clinician may continue the anticholinergic drug after the antipsychotic has been stopped until the parkinsonian symptoms resolve completely.

III. Neuroleptic-Induced Acute Dystonia

A. Diagnosis, signs, and symptoms. Dystonias are brief or prolonged contractions of muscles that result in obviously abnormal movements or postures, including oculogyric crises, tongue protrusion, trismus, torticollis, laryngeal-pharyngeal dystonias, and dystonic postures of the limbs and trunk. Other dystonias include blepharospasm and glossopharyngeal dystonia: the latter results in dysarthria, dysphagia, and even difficulty in breathing, which can cause cyanosis. Children are particularly likely to evidence opisthotonos, scoliosis, lordosis, and writhing movements. Dystonia can be painful and frightening and often results in noncompliance with future drug treatment regimens.

B. Epidemiology. The development of dystonic symptoms is characterized by their early onset during the course of treatment with neuroleptics and their high incidence in men, in patients younger than age 30, and in patients given high dosages of high-potency medications.

C. Etiology. Although it is most common with intramuscular doses of high-potency antipsychotics, dystonia can occur with any antipsychotic. It is least common with thioridazine and is uncommon with atypical antipsychotics. The mechanism of action is thought to be dopaminergic hyperactivity in the basal ganglia that occurs when central nervous system (CNS) levels of the antipsychotic drug begin to fall between doses.

D. Differential diagnosis. Includes seizures and tardive dyskinesia.

E. Course and prognosis. Dystonia can fluctuate spontaneously and respond to reassurance so that the clinician acquires the false impression that the movement is hysterical or completely under conscious control.

F. Treatment. Prophylaxis with anticholinergics or related drugs usually prevents dystonia, although the risks of prophylactic treatment weigh against that benefit. Treatment with intramuscular anticholinergics or intravenous or intramuscular diphenhydramine (50 mg) almost always relieves the symptoms. Diazepam (Valium) (10 mg intravenously), amobarbital (Amytal), caffeine sodium benzoate, and hypnosis have also been reported to be effective. Although tolerance for the adverse effect usually develops, it is sometimes prudent to change the antipsychotic if the patient is particularly concerned that the reaction may recur.

IV. Neuroleptic-Induced Acute Akathisia

A. Diagnosis, signs, and symptoms. Akathisia is subjective feelings of restlessness, objective signs of restlessness, or both. Examples include a sense of anxiety, inability to relax, jitteriness, pacing, rocking motions while sitting, and rapid alternation of sitting and standing. Akathisia has been associated with the use of a wide range of psychiatric drugs, including antipsychotics, antidepressants, and sympathomimetics. Once akathisia is recognized and diagnosed, the antipsychotic dose should be reduced to the minimal effective level. Akathisia may be associated with a poor treatment outcome.

B. Epidemiology. Middle-aged women are at increased risk of akathisia, and the time course is similar to that for neuroleptic-induced parkinsonism.

C. Treatment. Three basic steps in the treatment of akathisia are (1) reducing medication dosage, (2) attempting treatment with appropriate drugs, and (3) considering changing the neuroleptic. The most efficacious drugs are β -adrenergic receptor antagonists, although anticholinergic drugs, benzodiazepines, and cyproheptadine (Periactin) may benefit some patients. In some cases of akathisia, no treatment seems to be effective.

V. Neuroleptic-Induced Tardive Dyskinesia

A. Diagnosis, signs, and symptoms. Tardive dyskinesia is a delayed effect of antipsychotics: it rarely occurs until after 6 months of treatment. The disorder consists of abnormal, involuntary, irregular choreoathetoid movements of the muscles of the head, limbs, and trunk. The severity of the movements ranges from minimal—often missed by patients and their families—to grossly incapacitating. Perioral movements are the most common and include darting, twisting, and protruding movements of the tongue, chewing and lateral jaw movements, lip puckering, and facial grimacing. Finger movements and hand clenching are also common. Torticollis, retrocollis, trunk twisting, and pelvic thrusting occur in severe cases. In the most serious cases, patients may have breathing and swallowing irregularities that result in aerophagia, belching, and grunting. Respiratory dyskinesia has also been reported. Dyskinesia is exacerbated by stress and disappears during sleep. Twitching of the nose has been called rabbit syndrome.

B. Epidemiology. Tardive dyskinesia develops in about 10% to 20% of patients who are treated for more than a year. About 20% to 40% of patients undergoing long-term hospitalization have tardive dyskinesia. Women are more likely to be affected than men. Children, patients who are more than 50 years of age, and patients with brain damage or mood disorders are also at high risk.

C. Course and prognosis. Between 5% and 40% of all cases of tardive dyskinesia eventually remit, and between 50% and 90% of all mild cases remit. However, tardive dyskinesia is less likely to remit in elderly patients than in young patients.

D. Treatment. The three basic approaches to tardive dyskinesia are prevention, diagnosis, and management. Prevention is best achieved by using antipsychotic medications only when clearly indicated and in the lowest effective doses. The atypical antipsychotics are associated with less tardive dyskinesia than the typical antipsychotics. Clozapine is the only antipsychotic to have minimal risk of tardive dyskinesia, and can even help improve pre-existing symptoms of tardive dyskinesia. This has been attributed to its low affinity for D₂ receptors and high affinity for 5HT₂ receptor antagonism. Patients who are receiving antipsychotics should be examined regularly for the appearance of abnormal movements, preferably with the use of a standardized rating scale. Patients frequently experience an exacerbation of their symptoms when the dopamine receptor

antagonist is withheld, whereas substitution of a serotonin-dopamine antagonist (SDA) may limit the abnormal movements without worsening the progression of the dyskinesia.

Once tardive dyskinesia is recognized, the clinician should consider reducing the dose of the antipsychotic or even stopping the medication altogether. Alternatively, the clinician may switch the patient to clozapine or to one of the new dopamine receptor antagonists. In patients who cannot continue taking any antipsychotic medication, lithium, carbamazepine (Tegretol), or benzodiazepines may effectively reduce the symptoms of both the movement disorder and the psychosis.

VI. Neuroleptic Malignant Syndrome

A. Diagnosis, signs, and symptoms. Neuroleptic malignant syndrome is a life-threatening complication that can occur anytime during the course of antipsychotic treatment. The motor and behavioral symptoms include muscular rigidity and dystonia, akinesia, mutism, obtundation, and agitation. The autonomic symptoms include high fever, sweating, and increased pulse and blood pressure. Laboratory findings include an increased white blood cell count and increased levels of creatinine phosphokinase, liver enzymes, plasma myoglobin, and myoglobinuria, occasionally associated with renal failure.

B. Epidemiology. Men are affected more frequently than women, and young patients are affected more commonly than elderly patients. The mortality rate can reach 10% to 20% or even higher when depot antipsychotic medications are involved. The prevalence of the syndrome is estimated to range up to 2% to 2.4% of patients exposed to dopamine receptor antagonists.

C. Pathophysiology. Unknown.

D. Course and prognosis. The symptoms usually evolve over 24 to 72 hours, and the untreated syndrome lasts 10 to 14 days. The diagnosis is often missed in the early stages, and the withdrawal or agitation may mistakenly be considered to reflect an exacerbation of the psychosis.

E. Treatment. In addition to supportive medical treatment, the most commonly used medications for the condition are dantrolene (Dantrium) and bromocriptine (Parlodel), although amantadine (Symmetrel) is sometimes used. Bromocriptine and amantadine possess direct dopamine receptor agonist effects and may serve to overcome the antipsychotic-induced dopamine receptor blockade. The lowest effective dosage of antipsychotic drug should be used to reduce the chance of neuroleptic malignant syndrome. Antipsychotic drugs with anticholinergic effects seem less likely to cause neuroleptic malignant syndrome.

VII. Medication-Induced Postural Tremor

A. Diagnosis, signs, and symptoms. Tremor is arrhythmic alteration in movement that is usually faster than one beat per second.

B. Epidemiology. Typically, tremors decrease during periods of relaxation and sleep and increase with stress or anxiety.

C. Etiology. Whereas all of the above diagnoses specifically include an association with a neuroleptic, a range of psychiatric medications can produce tremor—most notably lithium, antidepressants, and valproate (Depakene).

D. Treatment. The treatment involves four principles.

1. The lowest possible dose of the psychiatric drug should be taken,
2. Patients should minimize caffeine consumption,
3. The psychiatric drug should be taken at bed time to minimize the amount of daytime tremor,
4. β -adrenergic receptor antagonists (e.g., propranolol [Inderal]) can be given to treat drug-induced tremors.

Generic Name	Trade Name	Usual Daily Dosage	Indications
Anticholinergics			
Benztropine	Cogentin	PO 0.5--2 mg t.i.d.; IM or IV 1-2 mg	Acute dystonia, parkinsonism, akinesia, akathisia
Biperiden	Akineton	PO 2-6 mg t.i.d.; IM or IV 2mg	
Procyclidine	Kemadrin	PO 2.5-5 mg b.i.d.-q.i.d.	
Trihexyphenidyl	Artane. Tremin	PO 2-5 mg ;i.d.	
Orphenadrine	Norftex. Disipal	PO 50-100 mg b.i.d.-q.i.d.:IV 60 mg	Rabbit syndrome
Antihistamine			
Diphenhydramine	Benadryl	PO 25 mg q.i.d.: IM or IV 25mg	Acute dystonia, parkinsonism, akinesia, rabbit syndrome
Amantadine	Symmetrel	PO 100-200 mg b.i.d.	Parkinsonism, akinesia, rabbit syndrome
β-Adrenergic antagonist			
Propranolol	Inderal	PO 20-40 mg t.i.d.	Akathisia, tremor
α-Adrenergic antagonist			
Clonidine	Catapres	PO 0.1 m g t.i.d.	Akathisia
Benzodiazepines			
Clonazepam	Klonopin	PO 1mg b.i.d.	Akathisia, acute dystonia
Lorazepam	Ativan	PO 1 mg t.i.d.	
Buspirone	BuSpar	PO 20-40 mg q.i.d.	Tardive dyskinesia
VitaminE	-	PO 1.200-1.600 IU/day	
PO. oral: IM. intramuscular: IV. intravenous: b.i.d.. twice a day: t.i.d . three times a day: q.i.d.: four times a day.			

Treatment of Neuroleptic Malignant Syndrome

Intervention	Dosing	Effectiveness
Amantadine	200-400 mg/day PO in divided doses	Beneficial as monotherapy or in combination; decreases death rate
Bromocriptine	2.5 mg PO b.i.d. or t.i.d. may increase to a total of 45 mg/day	Mortality reduced as a single or combined agent
Levodopa /carbidopa	Levodopa 50-100 mg/day IV as continuous infusion	Case reports of dramatic improvement
Electroconvulsive therapy	Reports of good outcome With both unilateral and bilateral treatments response may occur in as few as 3	Effective when medications have failed: also may treat underlying psychiatric disorder

	treatments	
Dantrolene	1 mg/kg/day for 8 days then continue as PO for 7 additional days	Benefits may occur in minutes or hours as a single agent or in combination
Benzodiazepines	1-2 mg IM as test dose; if effective, switch to PO; consider use if underlying disorder has catatonic symptoms	Has been reported effective when other agents have failed
Supportive measures	IV hydration Cooling blankets Ice packs Ice water enema Oxygenation Antipyretics	Often effective as initial approach early in the episode
Adapted from Davis M. Coroff SN. Mann SC. Treatment of neuroleptic malignant syndrome. Psychiatr Ann 2000;30:325-331. PO. oral; IM. intramuscular; IV. intravenous; b.i.d.. twice a day; t.i.d.. three times a day.		