

# Anxiety Disorders\*

Leslie S. Zun | Kimberly Nordstrom

## PRINCIPLES

### Background

Anxiety is a specific unpleasurable state of tension that forewarns the presence of danger, real or imagined, known or unrecognized, and is often verbalized as an intense feeling of worry. Up to a point, anxiety can improve performance; however, extreme responses can lead to deterioration of performance. As the level of dysfunction increases, the patient is much more likely to have a true anxiety disorder.

Acute anxiety is common in emergency department (ED) patients who have primary anxiety disorders, concomitant anxiety disorders, and crisis situations. It is helpful to differentiate the origin of anxiety to offer appropriate treatment. As an example, many medical conditions mimic anxiety disorders, and up to 42% of patients initially thought to have anxiety disorders are later found to have organic disease.

Emergency clinicians should be able to distinguish between anxiety disorders and medical illness (Box 102.1) and, if necessary, treat both entities. Because anxiety states cause an increase in metabolic demands, they can cause a marginally compensated organ system to fail. In a recent study, 48% of patients presenting for pain complaints were found to have moderate to severe anxiety and only 1% received anxiety treatment.<sup>1</sup>

### Epidemiology

Approximately 40 million Americans older than 18 years old, nearly 20% of adults, are affected by anxiety disorders each year. Many primary care patients have significant mood and anxiety symptoms, such as panic disorders, generalized anxiety disorders (GADs), and depression, but nearly half of these symptomatic patients never receive appropriate treatment. Patients with chronic illness and those who make frequent medical visits have higher rates of anxiety and depression. The prevalence of anxiety disorders surpasses that of any other mental health disorder, including substance abuse. There is a close relationship between alcohol abuse and anxiety disorders.

The incidence of specific anxiety disorders varies: specific phobia is 7% to 9%, social anxiety is 7%, panic disorder is 3%, and GAD is 3%.<sup>2</sup> The lifetime risk for post-traumatic stress disorder (PTSD) is about 9%, but the 12-month prevalence is approximately 4%. Substance or medication-induced anxiety and anxiety due to a medical condition have an unknown prevalence but may be relatively high in those seeking emergency medical care.

A different form of anxiety, related to fear of suffering from an illness, now known as *illness anxiety disorder* (formerly hypochondriasis), may be as high as 8% in ambulatory medical populations.<sup>2</sup> Patients may present with a physical complaint and try to disguise

their anxiety rather than bear the perceived stigma associated with psychiatric complaints, and they are distinct from patients who have a somatoform disorder.

### Pathophysiology

There are many forms of anxiety disorders, and the precise mechanisms underlying the development of anxiety have not been fully established. The serotonin system and the noradrenergic systems are common pathways implicated in anxiety. It is believed that low serotonin system activity and elevated noradrenergic system activity are involved, and thus selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are frequently used as treatment. There is also considerable comorbidity with depressive disorders, with evidence showing genetic and neurobiologic similarities, especially related to serotonin.

The well-established effectiveness of benzodiazepines in the treatment of anxiety has led to the study of the gamma-aminobutyric acid (GABA) system and its relationship to anxiety. GABA is the principal inhibitory neurotransmitter in the central nervous system, and benzodiazepines act on the GABA<sub>A</sub> receptors. Studies have focused on the role that corticosteroids may play in fear and anxiety. Steroids are thought to induce chemical changes in select neurons that strengthen or weaken certain neural pathways to affect behavior under stress.<sup>3</sup>

Family research suggests that genetic factors play a role in anxiety, but the precise nature of the inherited vulnerability is unknown. Five major anxiety disorders, panic disorder, GAD, phobias, obsessive-compulsive disorder (OCD), and PTSD, share genetic and environmental risk factors. Psychological and environmental factors also contribute in the generation of anxiety in biologically predisposed individuals.

## CLINICAL FEATURES

Many patients seeking care in the ED experience anxiety related to encountering internal and external dangers, such as assaults on body integrity in the form of uncomfortable procedures and forced intimacy with strangers. In addition, the patient may experience uncertainty about his or her illness and the potential implications of the illness.

Anxiety may be a manifestation of a physical disorder or an expression of an underlying psychiatric disorder. It may be difficult to make the distinction between anxiety as a symptom and anxiety as a syndrome in the ED. The physical symptoms of autonomic arousal (eg, tachypnea, tachycardia, diaphoresis, light-headedness) may be the only manifestations of anxiety. Classic panic disorder symptoms of chest pain, shortness of breath, and the sense of impending doom will often lead the patient to the ED, especially if it is the very first episode.<sup>3</sup> Anxiety associated with medical disorders is more likely to be manifested by physical symptoms and less likely to be associated with avoidance behavior (see Box 102.1).

\*The authors thank Rick McPheeters and Joshua L. Tobias for their contributions to this chapter in previous editions of this text.

**BOX 102.1****Predictors of Anxiety Caused by an Underlying Medical Issue**

Onset of anxiety symptoms after 35 years old  
 Lack of personal or family history of an anxiety disorder  
 Lack of childhood history of significant anxiety, phobias, or separation anxiety  
 Lack of avoidance behavior  
 Absence of significant life events generating or exacerbating the anxiety symptoms  
 Poor response to anti-anxiety agents

**BOX 102.2****Characteristics of a Panic Attack**

Abrupt surge of intense fear or discomfort that reaches a peak within minutes, in which four or more of the following occur:  
 Palpitations  
 Sweating  
 Trembling  
 Shortness of breath or feeling of being smothered  
 Feeling of choking  
 Chest pain or discomfort  
 Nausea or abdominal distress  
 Feeling dizzy or light-headed  
 Chills or heat sensations  
 Paresthesias  
 Derealization or depersonalization  
 Fear of losing control or going “crazy”  
 Fear of dying

Adapted from American Psychiatric Association: Diagnostic and statistical manual of mental disorders, ed 5, Arlington, VA, 2013, American Psychiatric Association.

Clinical manifestations of specific anxiety disorders are considerably different, warranting a review of each of the major types.

**Panic Disorder**

Panic disorder is a diagnosis of exclusion, even in patients with known psychiatric illness, because several mental illnesses cause panic attacks as a secondary manifestation. For a diagnosis of panic disorder, one must experience recurrent, unexpected panic attacks (Box 102.2), as well as either persistent concern of future attacks or a maladaptive behavioral change related to the attacks. As with other disorders, the disturbance should not be better explained by substance use, another medical condition, or another psychiatric illness.<sup>2</sup> A panic attack, differentiated from the disorder, is an abrupt fear or discomfort that reaches a peak within minutes and has associated physical and cognitive symptoms.<sup>2</sup> It may occur with any anxiety disorder or as part of another mental or physical disorder. A panic attack is not a diagnosis but rather an indication of an underlying disorder. The presence of panic attacks often influences the treatment and outcome of the primary illness. An attack can be replicated by intentional hyperventilation. Intentional hyperventilation can be distinguished from medical hyperventilation by its irregularity and interruptions. When there is doubt, formal psychiatric evaluation is indicated, particularly before a potentially dangerous or addictive drug therapy is prescribed.

**BOX 102.3****Characteristics of Post-Traumatic Stress Disorder\***

Exposure to actual or threatened death, serious injury, or sexual violence.  
 Presence of intrusion symptoms associated with the traumatic event.  
 Persistent avoidance of stimuli associated with the traumatic event.  
 Negative alterations in cognition and mood associated with the traumatic event.  
 Marked alterations in arousal and reactivity associated with the event.  
 Duration is greater than 1 month.  
 Disturbance causes clinically significant distress or impairment.  
 Disturbance is not attributable to the physiological effects of a substance or another medical condition.

\*Specifiers include “with dissociative symptoms” and “with delayed expression.”  
 From American Psychiatric Association: Diagnostic and statistical manual of mental disorders, ed 5, Arlington, VA, 2013, American Psychiatric Association.

**Generalized Anxiety Disorder**

GAD is defined as excessive worry that occurs most days over a 6-month period involving several events or activities.<sup>2</sup> The anxiety must cause significant distress or impairment in functioning. GAD has been linked to overuse of medical services and often is not recognized, which leads to ineffective treatment.

**Post-Traumatic Stress Disorder**

PTSD is caused by experiencing or witnessing a highly traumatic event. Those with PTSD manifest symptoms of re-experiencing the event, avoidance of triggers, changes in cognition and mood, and changes in arousal and reactivity (Box 102.3). Rates of PTSD are higher among military veterans and those whose occupation involves risk of traumatic exposure.<sup>2</sup> ED staff are also at risk for experiencing PTSD related to unusual traumatic events and unexpected deaths and, unfortunately, the support for this tends to be minimal.<sup>4</sup>

**Specific Phobias**

A phobia is an irrational fear that results in avoidance. Phobia becomes a disorder when it interferes with day-to-day function in an individual's life. A social phobia, now termed *social anxiety disorder*, is characterized by clinically significant anxiety about one or more social situations in which the individual may be scrutinized.<sup>2</sup> This fear often leads to avoidance behavior for such activities, such as public speaking, performing, visiting, using public showers or restrooms, or eating in public places.

**Obsessive-Compulsive Disorder**

OCD is characterized by recurrent, obtrusive, unwanted thoughts (obsessions), such as fears of contamination, or compulsive behaviors or mental acts (compulsions) that a person feels compelled to perform, such as handwashing or counting. OCD is considered an anxiety disorder because (1) anxiety or tension is often associated with obsessions and resistance to compulsions, (2) anxiety or tension is often immediately relieved by yielding to compulsions, and (3) OCD often occurs in association with other anxiety disorders.<sup>2</sup> In summary, the obsessions and intrusive thoughts increase anxiety, and the compulsions and repetitive behaviors decrease anxiety but with significant disruption of one's life.

## Somatic Symptoms and Related Disorders

Although not necessarily considered anxiety disorders, this group of disorders has an undefined, but established link to anxiety and depressive disorders. This group includes somatic symptom disorder, illness anxiety disorder (formerly hypochondriasis), conversion disorder (formerly functional neurological symptom disorder), and psychological factors affecting other medical conditions. With somatic disorders, the patient will complain about one or more physical symptoms, which cause impairment notwithstanding a negative evaluation. These symptoms are not intentionally feigned, as in the case of malingering or factitious disorder. A high utilization of medical services is correlated with these disorders, independent of comorbidity. Patients with panic disorder, however, seek at least as much psychiatric attention as do those with somatoform disorders.

## DIFFERENTIAL DIAGNOSIS

In patients who present with predominant symptoms of anxiety, even when the patients have known anxiety disorders, before considering which of the previously discussed *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) anxiety-related diagnoses the patient might have, the emergency clinician should first consider the possibility of medical and pharmacologic-related conditions associated with anxiety.

Patients with anxiety disorders may present with apparent physical disease, and many physical diseases are strongly associated with symptoms of anxiety. Several factors help distinguish an anxiety syndrome caused by an underlying medical issue from a primary anxiety disorder (see [Box 102.1](#)). Anxiety disorder classifications in the DSM-5 include anxiety caused by another medical condition.<sup>2</sup>

Because anxiety may be the most obvious symptom of an underlying disease or condition, the patient should be evaluated for exacerbation of known preexisting disease, as well as for the onset of new illness, because anxiety increases the risk of acute medical exacerbation of chronic illness.

The classic scenarios of pulmonary embolism and hyperthyroidism causing anxiety are well documented. Post–myocardial infarction patients with anxiety have poorer outcomes than those without documented anxiety. Patients with respiratory diseases, such as asthma and chronic obstructive pulmonary disease, often have anxiety associated with long-standing illnesses. In addition, many of the medications used to treat these illnesses may induce anxiety. One of the most common medical causes of anxiety is alcohol and drug use from either intoxication or, more typically, withdrawal states.

## Cardiac Diseases

Approximately 25% of patients with chest pain who present to the ED have panic disorder. Their disorder often goes undiagnosed, resulting in multiple visits and expensive cardiac evaluations. Symptoms of myocardial infarction and angina pectoris may include crushing chest pain, shortness of breath, nausea, palpitations, heavy perspiration, and a feeling of impending death. These are also the primary symptoms of acute anxiety, but the pain is usually described as atypical, and patients are generally female and younger. Because of the morbidity and mortality of cardiovascular disease, a patient warrants a full cardiac evaluation when the differentiation between myocardial infarction and acute anxiety is unclear.

Cardiac dysrhythmias can cause palpitations, discomfort, dizziness, respiratory distress, and syncope. A panic attack has similar symptoms. Fortunately, most dysrhythmias can be documented

and characterized on cardiac monitors or by electrocardiography. Mitral valve prolapse syndrome can be associated with palpitations and panic attacks indistinguishable from a panic disorder. Benzodiazepines can be used to provide symptomatic relief to patients who experience chest pain due to anxiety.

## Endocrine Diseases

The most common endocrinologic conditions associated with anxiety states are hypoparathyroidism, hyperthyroidism and hypothyroidism, hypoglycemia, pheochromocytoma, and hyperadrenocorticism. Anxiety is the predominant symptom in 20% of patients with hypoparathyroidism. Studies indicate a higher incidence of anxiety in the subset of patients with surgically removed parathyroid glands. Even though other symptoms may improve with supplementation, patients have been found to have significant depression, anxiety, somatization and phobic anxiety, even after being given calcium and vitamin D.

Anxiety symptoms are seen in up to 40% of diabetics, and 14% of diabetic patients suffer from anxiety disorders. There is evidence that diabetics who are treated with antianxiety medication not only reduce their anxiety but also decrease their glycosylated hemoglobin levels and high-density lipoprotein concentration. One study found that diabetics with mental health problems were less likely to improve glycemic control and suggested that psychological evaluation and therapy be used adjacently.<sup>5</sup>

Pheochromocytomas are rare tumors that produce elevated levels of catecholamine in the body. Pheochromocytoma attacks may manifest similar to panic attacks and can be precipitated by emotional stress. Elevated urinary catecholamine or plasma metanephrine levels confirm a pheochromocytoma.

Hyperthyroidism is one of the most frequently encountered endocrine diseases associated with anxiety. As with panic disorders, hyperthyroidism is associated with acute episodic anxiety. Thyrotoxicosis causes anxiety, palpitations, perspiration, hot skin, rapid pulse, active reflexes, diarrhea, weight loss, heat intolerance, proptosis, and lid lag. A substantial portion of patients continue to have psychiatric manifestations even after treatment.

Psychiatric presentations can be the first sign of hypothyroidism, occurring as the initial symptom in 2% to 12% of reported cases along with deficits of impaired recent memory and learning. The severity of anxiety disorders in hypothyroid states is related to the rapidity of thyroid hormone level changes and not to the absolute hormone levels. In general, checking serum thyroid-stimulating hormone and free thyroxine levels will suffice in the ED to establish the diagnosis of thyroid disease.

## Respiratory Diseases

Most conditions causing airway compromise or impairment of gas exchange do not mimic psychiatric disorders. However, some conditions that cause hypoxemia or hypercarbia may lead to the development of significant anxiety. Up to a third of the patients with chronic obstructive pulmonary disease meet the criteria for anxiety disorder.

Patients who have severe asthma are twice as likely to have an anxiety disorder and almost five times as likely to have a phobia compared with nonasthmatics. Acute dyspnea from a pure panic attack with good air movement and normal lung sounds is easily differentiated from an asthma attack, but studies consistently show that anxiety disorders increase asthma morbidity and mortality.

Acute shortness of breath in any patient should not be immediately attributed to anxiety, especially because pulmonary embolism can present with only shortness of breath as the major symptom. Fortunately, pulmonary embolism can almost always

be distinguished by history and physical examination, assessment of risk factors for thromboembolic disease, and laboratory testing (eg, pulse oximetry, electrocardiography, chest radiography, and D-dimer assay) as indicated.

## Neurologic Disorders

Many neurologic conditions are associated with anxiety symptoms. For example, stress is one of the most common reported causes of seizures. Those who report stress as a trigger tend to have higher scores on anxiety tests, and the stress may be either acute or chronic.<sup>6</sup> Temporal lobe seizures, complex partial seizures, tumors, arteriovenous malformation, and ischemia or infarction have all been reported with panic attacks. Anxiety disorders also occur in the aftermath of traumatic brain injury (TBI). Approximately 23% of those who sustain a mild TBI are at risk for developing an anxiety disorder; this is frequently found in military personnel. In Huntington's disease, anxiety is the most common prodromal symptom. Anxiety occurs in up to 40% of patients with Parkinson's disease and up to 37% of patients with multiple sclerosis. Similarly, anxiety symptoms are common in moderate Alzheimer's disease.

## Drug Intoxication and Withdrawal States

Amphetamines, cocaine, and other sympathomimetic drugs are abused for their stimulant and mind-altering properties. Patients often present agitated, anxious, or when these drugs are taken in large doses and with prolonged use. Caffeine is a very commonly used stimulant, and studies suggest that 240 mg to 300 mg of caffeine per day should be the upper limit of healthy consumption. When consuming higher doses, considered caffeine intoxication, restlessness, nervousness, excitement, insomnia, diuresis, gastrointestinal disturbance, tachycardia, psychomotor agitation, as well as other unpleasant symptoms may occur.<sup>2</sup> The acute symptoms of caffeine intoxication and GAD are almost identical.

Marijuana users believe that the drug reduces their anxiety, but some experience a depersonalization that provokes severe anxiety, fearfulness, and symptoms of agoraphobia. Cannabis intoxication is associated with behavioral or psychological changes, such as anxiety, and physical signs, such as conjunctival injection, dry mouth, and tachycardia.<sup>5</sup> Lysergic acid diethylamide (LSD), phencyclidine (PCP), and ecstasy (3,4-methylenedioxy-methamphetamine [MDMA]) are hallucinogens that can produce anxiety and paranoia from chronic use or "bad trips." Flashbacks affect some users of LSD; the person may experience the symptoms of anxiety and paranoia weeks or months after use.<sup>7</sup>

Sedative, hypnotic or anxiolytic drugs (eg, benzodiazepines, barbiturates) are taken to relieve anxiety or sleeplessness, but their discontinuation can cause sedative withdrawal and rebound anxiety.<sup>2</sup> The severity of the withdrawal syndrome depends on the drug, dosage, duration of use, and speed of elimination. Symptoms include hyperalertness, motor tension, muscle aches, agitation, anxiety, insomnia, tremulousness, nausea, vomiting, convulsions, delirium, and even death.<sup>2</sup>

Although antidepressants are rarely abused, their abrupt cessation can cause a discontinuation syndrome, which may present as sensory and gastrointestinal-related symptoms, insomnia, lethargy, and extreme anxiety.<sup>8</sup>

Alcohol withdrawal can appear 6 to 12 hours after the last drink or significant reduction in consumption. Patients often have a detectable serum alcohol level at this time. Anxiety is one of the first and most prominent symptoms and is seen within 24 to 48 hours of the withdrawal state.<sup>9</sup> Symptoms of anxiety, insomnia, and autonomic dysfunction can last up to 3 to 6 months following alcohol withdrawal.<sup>2</sup>

## DIAGNOSTIC TESTING

The initial history and physical examination should focus on the presenting complaints to determine if the patient has an anxiety disorder or anxiety caused by drug abuse, medication use, or a general medical condition. The psychiatric history should, at minimum, include current symptoms, precipitating events (eg, job loss or relationship), past psychiatric and substance history, history of self-harm or suicide attempts, and identification of support systems. A thorough risk assessment for suicidality is key. Among ED patients, panic attacks have been found to be closely associated with suicidal ideation (43%) and intent (55%). Chapter 105 discusses suicide risk assessment.

A physical examination focused on the area of complaint is necessary, even when there is no overt evidence of physical disease. Abnormal vital signs suggest an organic medical cause of the anxiety symptoms. Laboratory tests may be necessary based on the clinical presentation, but no tests can confirm or exclude anxiety disorders. Patients with new symptoms require a more extensive medical and psychiatric investigation than those with a known disorder.

## MANAGEMENT

The patient should be placed in a quiet area for evaluation. Some patients calm when they are removed from a chaotic ED environment. If that is not possible, reducing environmental stimulants, such as turning down the lights, can be helpful. If the emergency clinician encounters difficulty in calming the patient, supportive family members may help.

### Pharmacologic Treatment

Use of oral, intravenous, or intramuscular medication may be necessary when an anxiety state is so out of control that there is a significant threat to safety of self or others. Medication may also be appropriate for the anxious patient experiencing a significant medical illness or undergoing a medical procedure. Lorazepam in small increments can be helpful in alleviating the anxiety associated with substance withdrawal states. Midazolam reduces anxiety and increases amnesia for ED procedures.

SSRIs and SNRIs have become first-line treatment of most anxiety disorders because of their broad spectrum of efficacy and high tolerability by most patients. They have a lower potential for dependence and are safer than older classes of antidepressants and anxiolytics. Improvement is usually seen in 4 to 6 weeks, but doses may have to be adjusted. Initiation of longer term medication is usually done by primary care physicians or psychiatrists. It is important to start the patient with low doses of SSRIs (usually half the normal starting doses used for depression) and to arrange for frequent short-term follow-up visits, because an initial increase in anxiety may be seen. We do not recommend that these medications be started in the ED unless accompanied by patient education and close follow-up with a primary care physician or psychiatrist.

Benzodiazepines can be prescribed for motivated patients with acute exogenous anxiety for time-limited stress. Benzodiazepines are an attractive alternative to the delayed response of an SSRI when an immediate reduction of symptoms is desired or a short-term treatment is needed. Benzodiazepines have a role in emergency medical treatment, but their use is questionable for long-term treatment. In most circumstances, benzodiazepines should be prescribed for a week or less. Patients who do not improve within a week are unlikely to benefit from the drug. Prescribers will commonly use a benzodiazepine for the first week while initiating SSRI or SNRI treatment. Patients with a history of alcoholism or drug abuse, who are excessively and emotionally

dependent, or who become anxious in response to normal stress are at greater risk of drug dependency and are not good candidates for this treatment.

Monoamine oxidase inhibitors and tricyclic antidepressants have been effective in treating anxiety but have been largely supplanted by SSRIs. Buspirone, a nonbenzodiazepine, has significant lag time and questionable efficacy, especially after the use of benzodiazepines.

Patients with apparent or known anxiety disorders should be referred to a primary care physician or a psychiatrist for a thorough evaluation of the type of anxiety and to create a long-term treatment plan.

### Nonpharmacologic Therapy

Supportive therapy can be used to calm patients and give them room to problem-solve. Emergency clinicians and staff can also use psychoeducation to normalize what is happening and to teach simple skills, such as breathing techniques. It is also particularly useful to educate the patient on the role that stimulants (eg, caffeine) and depressants (eg, alcohol) play in promoting anxiety.

There are multiple longer-term therapies that can be helpful for anxiety but are not used in the acute care setting. Psycho-

therapy may be helpful for individuals whose psychological makeup, coping style, interpersonal dynamics, and situational stressors contribute to their pathologic anxiety. The use of supportive, insight-oriented family therapy is helpful when these factors appear prominently in the patient's presentation. Cognitive-behavioral therapy helps the patient correct the cognitive misperceptions and overreactions that occur. Cognitive-behavioral therapy is very effective but requires commitment from the patient. Meditation, biofeedback, and suggestive hypnosis may also have a role in long-term treatment.

### DISPOSITION

Patients receiving initial treatment in the ED, without a proper handoff to outpatient care, are at an increased risk for return. If available, it is preferred that a social worker or mental health worker connect discharged patients with outside agencies and services, rather than providing patients with a referral list.

Most patients with an anxiety disorder can be safely discharged with close primary care physician or psychiatrist follow-up. Patients with an anxiety disorder associated with suicidal or homicidal ideation or with severe depression require urgent psychiatric attention and admission to the hospital.

### KEY CONCEPTS

- Patients who present with predominant symptoms of anxiety may be suffering from medical disorders, medication effects, or substance abuse or withdrawal.
- Anxiety may accompany the onset of serious medical disease, cause significant metabolic demands, and stress a marginally compensated organ system.
- Anxiety caused by physical illness is usually suggested by the patient's physical findings but may require testing to further delineate the cause.
- Oral, intravenous, or intramuscular medication may be necessary for patients who are a significant threat to themselves or others and for anxious patients with significant medical illness.
- Limited benzodiazepine therapy may be helpful for select patients.

*The references for this chapter can be found online by accessing the accompanying Expert Consult website.*

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## CHAPTER 102: QUESTIONS &amp; ANSWERS

- 102.1.** Which of the following is the most common mental health disorder?
- Anxiety
  - Bipolar
  - Depression
  - Schizophrenia
  - Substance abuse

**Answer: A.** Many of these patients never receive appropriate care, in part because they choose to present with a physical complaint and disguise their anxiety. Patients with chronic illnesses have higher rates of anxiety and depression than the rest of the population.

- 102.2.** What is the most common cause of organic anxiety, anxiety that results from a physiologic origin?
- Adrenal disorders
  - Alcohol and drug use
  - Cardiac disease
  - Hyperthyroidism
  - Pulmonary embolus

**Answer: B.** This may be from intoxication or withdrawal states.

- 102.3.** A 52-year-old woman presents with 2 months of recurrent episodes of anxiety, mild chest pain, subjective palpitations, hand paresthesias, and occasional muscle spasms. They have occurred weekly in the past but are now increasing in frequency. Her only past history is a thyroidectomy 4 months prior. She is taking levothyroxine (Synthroid) and had normal thyroid levels 2 weeks ago. Her vital signs, physical examination, and electrocardiogram are normal. Laboratory evaluation shows sodium 141 mEq/L, potassium 4.1 mEq/L, creatinine 1.0 mg/dL, bicarbonate 26 mEq/L, chloride 100 mEq/L, and calcium 7.1 mg/dL; a complete blood count is normal. Which of the following should be the next step in her management?
- Outpatient clonazepam
  - Parathyroid hormone level
  - Psychiatry consultation
  - Thyroid hormone levels
  - Urine drug screen

**Answer: B.** Anxiety is the predominant symptom in 20% of patients with hypoparathyroidism. Other symptoms include paresthesia, muscle cramps, and spasms. Most cases are idiopathic or due to inadvertent parathyroid gland harvest during thyroidectomy. The diagnosis is suggested by a low serum calcium and an elevated phosphate and is confirmed by a depressed parathyroid level.

- 102.4.** Which of the following statements regarding anxiety and endocrine disorders is *true*?
- Anxiety can often be traced to reactive hypoglycemia.
  - Anxiety is not a manifestation of hypothyroidism.
  - Diabetics treated with antianxiety agents have improved hemoglobin A1c levels.
  - Less than 5% of diabetics experience anxiety.
  - Patterns of diaphoresis in pheochromocytoma mimic those of a panic attack.

**Answer: C.** Approximately 15% of diabetics have an anxiety disorder. Treatment improves hemoglobin A1c levels. Anxiety due to reactive hypoglycemia is rare despite the common perception among patients. Pheochromocytoma causes whole body diaphoresis, whereas panic disorders primarily cause sweaty palms. Hyperthyroidism or hypothyroidism can cause significant anxiety manifestations. It is more related to the rate of change than the level of thyroid hormones.

- 102.5.** A 23-year-old woman with a history of asthma presents with increasingly frequent episodes of panic attacks. Her medications are an inhaled beta-agonist and an intermittent steroid inhaler. She reports subjective increasing asthma severity as her panic episodes have worsened. When counseling the patient, which of the following statements is most correct?
- An anxiety disorder in an asthmatic patient does not increase morbidity.
  - Anxiety does not precipitate asthma attacks.
  - Anxiety does not worsen airflow.
  - Asthmatics are more likely to have an anxiety disorder.
  - It is difficult to differentiate dyspnea related to asthma from anxiety.

**Answer: D.** Anxiety can precipitate and prolong an asthma attack. Morbidity and mortality are increased in asthmatic patients who have a coexisting anxiety disorder. Patients who have asthma are twice as likely to have an anxiety disorder and five times as likely to have a phobia. Acute dyspnea from "panic" dyspnea can be differentiated from asthma by clear lungs on auscultation.

- 102.6.** Which of the following syndromes is not associated with anxiety?
- Left hemispheric strokes
  - Multiple sclerosis
  - Right hemispheric strokes
  - Transient ischemia attack
  - All of the above can be associated with anxiety.

**Answer: E.** Anxiety may be a component of seizures, tumors, arteriovenous malformations, and ischemic events. It may be the only manifestation of some disorders (eg, right hemispheric strokes and transient ischemic attacks [TIAs]). The coexistence of anxiety plays an important role in the prognosis and impairment of stroke patients.

- 102.7.** A 38-year-old woman with a long history of anxiety and panic disorder presents with anhedonia, melancholy, sleep disruption, crying episodes, and some hostility feelings. She has no current anxiety symptoms. Her only medication is clonazepam. She has no known medical illness. Which of the following statements regarding this patient's symptoms is *true*?
- Approximately 50% of patients with panic disorder develop major depression.
  - Depression with anxiety and hostility is usually refractory to treatment.
  - The first diagnostic step should be a thyroid panel.
  - The majority of patients with depression have panic attacks.
  - This is likely a drug-induced depression.

**Answer: A.** Approximately 50% of patients with a primary panic disorder will later develop major depression. Twenty percent of patients with depression have panic attacks. Depression with panic attacks is less responsive to treatment, but depression with anxiety and hostility responds well to antidepressants. Although benzodiazepines can exacerbate symptoms of depression, there is already a high spontaneous rate of depression with anxiety disorders.

- 102.8.** Which of the following statements regarding benzodiazepine use and anxiety is *true*?
- Benzodiazepines are first-line agents for anxiety disorders.
  - Several weeks of treatment are indicated after initial diagnosis.
  - Short-acting benzodiazepines produce a more severe abstinence syndrome.
  - They are particularly useful in patients with alcohol abuse.
  - Withdrawal rebound is less common than with selective serotonin reuptake inhibitors (SSRIs).

**Answer: C.** SSRIs are the first-line agents for anxiety and panic disorders, but the primary disadvantage is the several-week lag needed for maximal clinical benefit. Benzodiazepines work best for motivated, dependable patients when an immediate reduction of symptoms is indicated or a short-term treatment is necessary. Patients who do not benefit from benzodiazepines within a week are unlikely to do so. Patients with a history of alcoholism or drug abuse, who are excessively/emotionally dependent, or who become anxious from normal stress are at greater risk for dependency. Rebound withdrawal is more likely after short-acting agents.

- 102.9.** A 29-year-old Caucasian female presents with excessive daytime somnolence. She states that she had been suffering from anxiety associated with her paralegal occupation, and 1 week ago her psychiatrist had started her on a 2-week course of once-daily benzodiazepine therapy, which she takes in the morning. Her anxiety symptoms are well controlled. She asks if you can change her to a new medication because the somnolence is significantly affecting her job

performance. What would be the most appropriate course of action?

- Counsel the patient that she should continue the medication as prescribed because she will soon adapt and the somnolence will likely subside.
- Discontinue the benzodiazepine and refer her back to her psychiatrist.
- Have her try dosing the benzodiazepine at bedtime, because this will likely continue to control her anxiety and limit daytime somnolence.
- Switch the patient to a selective serotonin reuptake inhibitor (SSRI) and refer her back to her psychiatrist.
- Switch the patient to a shorter-acting benzodiazepine.

**Answer: C.** Instituting an SSRI should be reserved for primary care physicians or psychiatrists who can monitor the patient more closely, because the response will be delayed. Some patients do adapt to the sedative effects of benzodiazepines but usually only after long-term use. Stopping the benzodiazepine may ultimately be necessary but at the risk of recurrent anxiety. Dosing benzodiazepines at bedtime may minimize daytime sedation and still provide an anxiolytic effect. Shorter-acting benzodiazepines produce a more severe abstinence syndrome when stopped abruptly, and thus most prescribers prefer longer-acting agents.

- 102.10.** A 52-year-old male construction worker presents with chest pain. He states his symptoms began early this morning and have progressively worsened throughout the day. His symptoms include nervousness, tremors, chest pain, shortness of breath, and palpitations. He states that he has had anxiety for 30 years but has controlled it with the consumption of alcohol. He became unemployed 1 week ago, and his daily alcohol use has diminished significantly. His vital signs are blood pressure (BP) 185/95 mm Hg, heart rate 123 beats per minute, respiratory rate of 20 breaths per minute, and temperature of 98.9° F. His physical examination is remarkable for diaphoresis, tongue fasciculation, both resting and intention tremors, and mild psychomotor agitation while maintaining orientation with a congruent anxious mood and affect. What is the most likely etiology of this patient's symptoms?
- Acute alcohol withdrawal syndrome
  - Exacerbation of endogenous anxiety secondary to diminished alcohol intake
  - Exacerbation of exogenous anxiety secondary to change in employment status
  - Hypertensive emergency with acute coronary syndrome
  - Reactive anxiety secondary to the onset of chest pain

**Answer: A.** Hypertensive emergency is unlikely given the level of this patient's BP. On the basis of the history alone, it may be difficult to differentiate organic versus functional anxiety or identify an exogenous trigger, but the abnormal vital signs and physical examination associated with a recent cessation of long-term alcohol consumption makes acute alcohol withdrawal the most likely cause. Given the significant morbidity associated with withdrawal states, this must be addressed acutely. Appropriate diagnosis and management of underlying psychiatric disease will be a secondary concern after the patient's withdrawal is managed.