Anxiety disorders are the most common psychiatric illnesses diagnosed in adolescents and older adults, are increasingly being seen in urban emergency departments, and occur more frequently in women than in men. These conditions are the most common psychiatric illnesses diagnosed in children, adolescents, and older adults. Anxiety disorders may significantly affect a patient’s quality of life and overall health. Anxiety is commonly associated with depression, other mood disorders, and substance abuse.

Numerous potentially life-threatening medical disorders feature symptoms that often mimic anxiety on initial evaluation. Emergency physicians must be able to discern such serious medical conditions from a principally anxious patient.

PATHOPHYSIOLOGY

Anxiety disorders are caused by a combination of biologic factors and environmental influences. Despite increased basic science and clinical research, a specific explanatory mechanism or model to describe the exact causes of anxiety has yet to be identified.

The genetic epidemiology of anxiety disorders has been confirmed by numerous studies and metaanalysis. Most anxiety disorders have significant familial aggregation, with the inheritability of panic disorder approaching a rate of 40%.

Several neurotransmitters play integral roles in the pathophysiology of stress and mood and anxiety disorders. Decreased γ-aminobutyric acid and serotonin receptor sensitivity are common in most anxiety disorders. Overactivity of the central norepinephrine system and elevated sensitivity to lactate and carbon dioxide are prominent findings in panic disorder. Cholecystokinin and increased excitatory neurotransmission by glutamate may contribute to the evolution of conditioned fear.

Evolving research suggests that dopamine and corticotropin-releasing factor play a role in both mood and anxiety disorders.

An environmental factor is integral to the development of anxiety. Stressful childhood experiences, such as abuse and divorce, contribute to generalized anxiety and panic disorders. Caffeine and other socially accepted stimulants (e.g., taurine, ginseng), as well as recreational substances (e.g., cocaine, methamphetamine, γ-hydroxybutyrate, jimson weed, salvia), often promote symptoms of anxiety. Finally, increasing exposure to violence, natural disasters, terrorism, and other traumatic events has caused greater numbers of people to suffer from acute stress reactions, anxiety, depression, and posttraumatic stress disorder.
CLINICAL PRESENTATION

Anxiety may be accompanied by many somatic and cognitive signs and symptoms, as listed in Box 197.1. The physical symptoms of acute anxiety are similar to those of excitement, such as chest pain, dry mouth, dyspnea, lightheadedness, and palpitations. Symptoms of subacute or chronic anxiety include fatigue, insomnia, and menstrual abnormalities. An anxious patient may have normal findings on physical examination or may exhibit tachycardia, tachypnea, and diaphoresis.

Psychologic symptoms of anxiety include distractibility, emotional lability, noncompliance, and recurrent or obsessive thoughts. An anxious patient may be easily startled, demonstrate pressured speech, or suffer repetitive behavior.

Children may not be able to articulate their fear or anxiety. As a result, an anxious pediatric patient may have seemingly disparate chief complaints, such as nonspecific abdominal pain and headache. During examination, anxious pediatric patients may have a temper tantrum or may appear more clingy or needy than expected.

A panic attack may be the feature of most anxiety disorders. A panic attack is a discrete episode of intense fear or discomfort in the absence of real danger that meets specific symptomatic criteria. The intensity of a panic attack usually peaks within 10 minutes and resolves within 30 minutes. Panic attacks are often accompanied by at least 4 of 13 discrete somatic and cognitive symptoms.

DIFFERENTIAL DIAGNOSIS, DIAGNOSTIC CRITERIA, AND TESTING

As evidenced by the broad range of associated signs and symptoms, anxiety disorders are part of an extensive differential diagnosis. Anxiety may represent a primary psychiatric condition or may be secondary to a medical illness. More than a dozen different anxiety disorders have similar physical symptoms and signs (Box 197.2).

The first and most important step in evaluating an anxious patient is to search for potential medical causes of the patient’s symptoms. As noted in Table 197.1, many different medical conditions and medications mimic, manifest, produce, or exacerbate anxiety. Through evaluation of all of the patient’s recent and past medical problems, current medications and supplements (including those available over the counter), family history, and social history (especially substance use and social stressors) may preclude an exhaustive and unnecessary medical work-up. The onset of a new behavioral symptom at a late age or the report of any feature that is not typically associated with anxiety increases the likelihood of a medical cause.

An appropriate physical examination helps identify or eliminate potential causes of anxiety. Abnormal vital signs and characteristic toxidromes often signal the presence of a medical illness or drug-associated condition. A focused neurologic examination, including mental status, is critical to the diagnosis of intracranial disease.

Myocardial infarction, angina pectoris, and dysrhythmias may have clinical findings similar to those of a panic attack. Several studies have indicated that up to 30% of patients with chest pain who are evaluated in the ED meet the diagnostic criteria for panic disorder. Alternatively, more than 40% of patients with panic disorder had documented coronary artery disease in a related study.

Nearly 25% of medical conditions that cause symptoms of anxiety are endocrine disorders such as hypoglycemia, hyperthyroidism, and hypoparathyroidism. Approximately 30% to 50% of female hyperthyroid patients suffer from panic and generalized anxiety disorders.

Transient ischemic attacks, temporal lobe seizures, and brain tumors may promote anxiety. Up to 50% of patients with intracranial tumors, such as pituitary adenomas and metastatic disease, may have psychiatric manifestations.

Exacerbations of asthma and chronic obstructive pulmonary disease may mimic the hyperventilation and respiratory distress observed during a panic attack. A patient with acute pulmonary embolism may exhibit chest tightness, dyspnea, diaphoresis, and apprehension.

An appropriate screening evaluation with laboratory and ancillary tests should be considered for anxious patients whose findings are not consistent with a past episode. At minimum, a chemistry panel, complete blood count, pregnancy test, prescription drug levels, and toxicology screen are often necessary. If indicated, additional tests such as an electrocardiogram, computed tomography of the brain, thyroid levels, or lumbar puncture may also be obtained.

TREATMENT

Treatment of an anxious patient should begin with the creation of a calm, quiet clinical environment. An empathetic tone and willingness to listen will relieve some of the patient’s anxiety,
**Box 197.2 Definitions of Anxiety Disorders**

**Panic attack** is a discrete period characterized by the sudden onset of intense apprehension, fearfulness, or terror; it is often associated with feelings of impending doom.

**Agoraphobia** is anxiety about or avoidance of places or situations from which escape may be difficult (or embarrassing) or in which help may not be available in the event of a panic attack or panic-like symptoms.

**Panic disorder without agoraphobia** is characterized by recurrent, unexpected panic attacks about which persistent concern exists.

**Panic disorder with agoraphobia** is characterized by both recurrent, unexpected panic attacks and agoraphobia.

**Agoraphobia without history of panic disorder** is characterized by the presence of agoraphobia and panic-like symptoms without a history of unexpected panic attacks.

**Specific phobia** is characterized by clinically significant anxiety provoked by exposure to a specific fear, object, or situation; it often leads to avoidance behavior.

**Social phobia** is characterized by clinically significant anxiety produced by exposure to certain types of social or performance situations; it often leads to avoidance behavior.

**Obsessive-compulsive disorder** is characterized by obsessions (which cause marked anxiety or distress) or compulsions (which serve to neutralize anxiety).

**Posttraumatic stress disorder** is characterized by the recurrent mental experience of an extremely traumatic event accompanied by symptoms of increased arousal and avoidance of stimuli associated with the trauma.

**Acute stress disorder** is characterized by symptoms similar to those of posttraumatic stress disorder that occur immediately after an extremely traumatic event.

**Generalized anxiety disorder** is characterized by at least 6 months of persistent and excessive anxiety and worry.

**Anxiety disorder due to a general medical condition** is characterized by prominent symptoms of anxiety that are judged to be a direct physiologic consequence of a general medical condition.

**Substance-induced anxiety disorder** is characterized by prominent symptoms of anxiety that are judged to be a direct physiologic consequence of drug abuse, medication use, or toxin exposure.

**Anxiety disorder not otherwise specified** is included for coding disorders with prominent anxiety or phobic avoidance that do not meet the criteria for any of the specific anxiety disorders.

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**Table 197.1 Medical Conditions Associated with Anxiety**

<table>
<thead>
<tr>
<th>SYSTEM OR CAUSE</th>
<th>CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac</td>
<td>Angina, arrhythmias, hypertensive urgency or emergency, mitral valve prolapse, myocardial ischemia, Takotsubo syndrome</td>
</tr>
<tr>
<td>Endocrine</td>
<td>Addison disease, carcinoid syndrome, Cushing syndrome, diabetes, parathyroid disease, pheochromocytoma, postpartum depression, thyroid disease</td>
</tr>
<tr>
<td>Exogenous</td>
<td>Caffeine or stimulant use, dietary supplement use, herbal remedies, acute intoxication (alcohol, amyl nitrate, cocaine, γ-hydroxybutyrate, khat, lysergic acid diethylamide [LSD], methamphetamine, salvia, yohimbine), monosodium glutamate, tyramine-containing foods in combination with monoamine oxidase inhibitors, withdrawal (alcohol, benzodiazepine, heroin, sedative)</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Dyspepsia, gastroesophageal reflux disease, irritable bowel syndrome, liver failure</td>
</tr>
<tr>
<td>Immunologic</td>
<td>Allergic reaction and mastocytosis</td>
</tr>
<tr>
<td>Infectious</td>
<td>Acute or evolving infection, human immunodeficiency virus infection, neurophilis</td>
</tr>
<tr>
<td>Medication</td>
<td>Amphetamine/dextroamphetamine (Adderall), albuterol, anticholinergics, digitalis, dystonic reaction, agents for erectile dysfunction, estrogen, histamine 1 and 2 blockers, selective serotonin reuptake inhibitors, serotonin syndrome, theophylline</td>
</tr>
<tr>
<td>Metabolic</td>
<td>Electrolyte abnormalities (calcium, glucose, magnesium, phosphorus, potassium, sodium, urea), nutritional deficiencies (vitamin deficiency such as B12 and folate), porphyrias, Wilson disease</td>
</tr>
<tr>
<td>Neurologic</td>
<td>Brain tumors, cerebrovascular accidents (including transient ischemia attack), degenerative disorders (Huntington chorea, multiple sclerosis, myasthenia gravis), delirium, dementia (Alzheimer type), encephalitis, meningitis, seizure disorder (nonconvulsive and temporal lobe)</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>Conversion disorder, depression, insomnia or sleep disorders, mania, psychosis, schizophrenia, stress disorder or stressors (e.g., abuse, finances, marital or relationship, trauma)</td>
</tr>
<tr>
<td>Pulmonary</td>
<td>Asthma, chronic obstructive pulmonary disease, pulmonary embolism, upper respiratory infection</td>
</tr>
</tbody>
</table>

as well as facilitate an appropriate medical evaluation. The presence of a trusted, supportive friend or family member may also be helpful.

Benzodiazepines are the recommended first-line agents for pharmacologic management and may be given orally to patients in the ED for minimal to moderate symptoms. In those with severe symptoms, intravenous lorazepam, diazepam, and midazolam should be administered. Lorazepam may be given in 0.5-mg doses, whereas diazepam and midazolam may be given in 1- to 2-mg increments. For milder, less urgent symptoms and limited outpatient use, the recommended dose of clonazepam and alprazolam is 0.25 to 0.50 mg. Buspirone, monoamine oxidase inhibitors, selective serotonin reuptake inhibitors, and recently, cognitive behavioral therapy are used by psychiatrists for the outpatient treatment of anxiety disorders.

**REFERENCES**

References can be found on Expert Consult @ www.expertconsult.com.

**DISPOSITION**

Most anxious patients may be discharged home after appropriate ED evaluation and stabilization. Immediate psychiatric consultation is recommended for anxious patients who report suicidal or homicidal ideation, who are severely depressed or unable to care for themselves, or who may not have reliable follow-up. Coordination with a behavioral health resource or case management–based intervention may also improve follow-up care. Anxious patients discharged from the ED should be instructed to seek care from their primary physician or mental health provider as soon as possible.
REFERENCES