Chapter 1: Antidepressant Drug Therapy for Pharmacy Professionals

3 Contact Hours

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Learning objectives

- Define major depression.
- Describe the different types of depression.
- Discuss the incidence and prevalence of major depression.
- Identify the signs and symptoms of major depression.
- Discuss possible causes of major depression.
- Explain how major depression is diagnosed.
- Identify the classifications of drugs used to treat depression.
- Explain the action of each classification of antidepressant drug therapy.
- Describe the side effects of each classification of antidepressant drug therapy.
- Identify herbs used in the treatment of depression.
- Explain the potential reactions when using herbs for the treatment of depression.
- Summarize important considerations for patient education.

Introduction

Nicole is a pharmacy technician who works in a large pharmacy that is part of a major drugstore chain. Several people approach the pharmacy entrance. She recognizes 35-year-old Mr. Davidson, who had a prescription filled for antidepressant medication last week. His wife and mother accompany him. His mother appears impatient and angrily tells him, “I don’t understand this depression business. Everybody feels sad sometimes, but you just have to get over it. You don’t need medicine.”

Mrs. Davidson looks anxiously at her husband and asks her mother-in-law to help her make some purchases. After the two women walk away, Mr. Davidson looks tearful and shakes his head. “This medicine isn’t working. I’ve been taking it for over a week now and there’s no difference. I can’t take feeling like this anymore. I’m just a weakling, like my mother says.” Nicole is very concerned. She gently tells Mr. Davidson, “You are not a weakling. Depression is an illness that can be treated with your medication, but it may take time for you to start to feel a difference. Please sit down. I am going to have the pharmacist come and talk to you about how your medicine works.”

Fortunately for Mr. Davidson, an alert, knowledgeable pharmacy technician was able to initiate actions that will help him. Nicole knows that depression is not something one just “gets over” and that it can take weeks for antidepressants to produce therapeutic effects. Therefore, Nicole has taken the appropriate steps to ensure Mr. Davidson’s safety and help him get the most benefit from his medication.

Being able to help Mr. Davidson and other patients with major depression requires not only knowledge of antidepressant drugs, but also knowledge of major depression disorder as well. Causes, contributing risk factors, and presenting signs and symptoms are all issues pharmacy technicians must be aware of. Such knowledge helps to provide patients with the best possible care and to help them achieve the best possible outcomes. Pharmacy technicians who are knowledgeable of the nuances of major depression will put themselves in a better position to not only serve their patients and attend to their needs as they arise, but also prevent medication errors and enhance patient care.

This course will discuss the definition and diagnosis of major depression, its prevalence, signs and symptoms, and major causes of this condition. A thorough discussion of available treatments for major depression will be discussed as well, including a description of the major drug classes, drugs in each class, side effects, and major drug interactions.

What is major depression?

Major depression, also referred to as unipolar disorder, is a disorder characterized by persistent feelings of sadness and worthlessness, anxiety, low self-esteem, difficulty concentrating, and lack of pleasure or no interest in normal daily activities.
There are three types of depressive episodes. These are single, recurrent and seasonally patterned.10

1. **Single depressive episode**: A person experiences a limited episode of depression that occurs and ends within a fixed period of time. After this one episode, the person does not experience depression again.10 However, it is important to know that 50 percent to 60 percent of persons who have one episode of depression will have another one.21 After a patient experiences a second episode of depression, there is a 70 percent chance that the depression will return.24

2. **Recurrent depression**: Two or more depressive episodes occur, separated by at least two months of normal or near-normal functioning.11

3. **Seasonal affective disorder (SAD)**: Changes in mood in persons who are depressed may be related to the seasons of the year. Patients who experience season-related depression are usually depressed during the fall and winter and feel better during the spring and summer. It is hypothesized that SAD is caused by a reduction in the brain’s melatonin secretion, which is triggered by sunlight. Since there is less sunlight during the fall and winter, SAD is more prevalent during these months. However, there have been rare reported cases of SAD occurring during the spring and summer.10

Some patients experience only one episode of major depression and never have a recurrence of the problem, while others may experience multiple episodes. Still others may suffer chronic depression that lasts a lifetime. It is not possible to determine whether one episode of major depression will develop into a lifetime condition for each patient.24,27

### Incidence and prevalence of major depression

Mental illness, defined as diagnosable mental disorders, causes more disability in developed countries than any other group of illnesses, including cancer and cardiac disease. In fact, it is estimated that 25 percent of all adults in the United States will develop at least one mental illness during their lives.1 Depression is one of the most common mental illnesses, affecting nearly 18 million Americans, or one out of every six people.4,8 Therefore, it is likely that health care professionals, at some point in their careers, will work with patients who are experiencing depression.

The number of reported cases of depression has been increasing every year since the early 20th century.

**Depression alert!** The incidence of depression may be much higher than actually reported. It is estimated that only half of all persons who meet the criteria for diagnosis of major depression (according to the Diagnostic and Statistical Manual of Mental Disorders, 4th ed.) request treatment. This makes it very difficult to accurately determine the true incidence of depression.4

Culture and socioeconomic conditions play a significant role in the reporting and treatment of depression. In some cultures and countries, mental illness may not be openly discussed or acknowledged. For example, in Eastern countries, depressive symptoms are often reported as a loss of energy or various types of pains rather than a mental health issue.8 It is important that health care providers do a careful and thorough history and physical, including mental health assessments, when evaluating patients’ health and well-being.

Major depression affects all racial, ethnic and socioeconomic groups. It is twice as common in women as in men. However, the incidence of depression in men increases with age, and the incidence of depression in women decreases with age. There is also a higher risk of depression in patients with a family history of the disorder. Major depression is 1.5 to 3 times higher in first-degree relatives (e.g., parents, siblings, children) than in the general population. The incidence of major depression is highest in single people and in people who are divorced.24

Depression occurs in all age groups, but its onset is commonly first identified between the ages of 24 and 44. The incidence of depression and suicide among teenagers increases every year. Experts hypothesize that this increase is due to feelings of pressure to meet expectations of parents and peers as well as self-esteem problems.7

### Signs and symptoms of major depression

**Marjorie** is a 32-year-old assistant professor of American literature at a large, prestigious university. She is highly respected by her colleagues and students and has published several critically acclaimed books. She is married and the mother of a 5-year-old daughter. Her marriage had always been happy and her daughter a source of great joy to both her and her husband. However, for the past month, Marjorie has complained that she feels “exhausted” and emotionally “drained.” Marjorie spends most of her time at home sleeping, and no longer has any interest in spending time with her husband and daughter. Her students are beginning to complain that she has no interest in them or in teaching. Marjorie’s family and work colleagues are concerned and urge her to see a doctor. Marjorie responds by saying, “What good will that do? There’s nothing to enjoy about life anymore, and a doctor isn’t going to help me feel any better.” Marjorie seems to be experiencing a major depressive episode.

The primary exhibiting symptoms of a major depressive episode include:4,24

- Agitation.
- Fatigue.
- Decreased self-esteem.
- Difficulty concentrating or making decisions.
- Lack of interest in sexual activity.
- Suicidal thoughts.

Some patients with severe depression (about 9 percent of those affected) may have psychotic symptoms, such as hallucinations or delusions. These symptoms can be severe and may indicate another mental health disorder, or simply an adverse reaction to major depression. These patients should be thoroughly evaluated by a mental health professional.24,27

**Depression alert!** Some patients with depression may feel that life is no longer worth living and attempt to take their own lives. About twice as many women compared to men attempt to commit suicide, but men who attempt suicide are more likely to succeed in the attempt.4 Suicide often occurs just as depression begins to lift (e.g., after antidepressants start to take effect). This may be because of a lessening of the fatigue and inability to concentrate associated with depression. As the depression begins to lift, the patient’s energy level and ability to concentrate increases, and the ability to plan and implement a suicide plan also increases. This is especially common in adolescents and young adults, and a black box warning on many antidepressants warns caregivers to monitor patients closely for this reaction.4,24,26,27
Causes and diagnosis

Charlotte is a business manager who works at a large university-affiliated medical center. She is having lunch with her best friend Anna, a pharmacy technician with many years of experience in a variety of health care settings. Charlotte has had several recurrences of major depression over a period of several years. It is likely that she will need to take antidepressant medication indefinitely. Charlotte is tearful and confesses that her husband and teenage children are starting to question why she is still taking medication. “My husband and the kids say I’m just babying myself. They keep telling me that I have a good life and don’t seem depressed. They want me to stop taking medication. They say there is no real reason for me to become depressed again. I’m beginning to wonder myself if I need this medication. What really causes depression anyway? It’s just something emotional, isn’t it? I mean, there’s no physical reason for me to become depressed, is there?” Anna responds by explaining that there are a number of possible causes of depression. She wants to help Charlotte get the necessary patient education about major depression, its possible causes and its treatment.

Psychosocial stressors

Psychosocial stressors can trigger depression. Depression is more common in patients who have a history of significant trauma, such as death of a loved one, divorce, physical abuse, sexual abuse, or loss of income. Stress in the workplace or home life can also contribute to the development of depression. The patient’s history and a thorough discussion with the patient about depressive triggers may pinpoint a specific bereavement or stressor that has triggered the depression.

Physical medical conditions

Depression may occur secondary to a number of physical medical conditions, such as:
- Malignancies.
- Endocrine disorders.
- Neurologic diseases.
- Bacterial infections.

Medications

Gerald is diabetic. His disease has been well controlled for many years by diet and oral anti-diabetic medication. Gerald also suffers from recurring episodes of major depression. His physician believes that Gerald’s anti-diabetic medication may be contributing to his depression.

Various medications used to treat physical and other mental health illnesses can also cause depression. It is important that pharmacy personnel are aware of this potential side effect, and pharmacists should include ways to monitor for depression as part of patient education. Patients who experience depression as a side effect of other medications should discuss their symptoms with their medical provider immediately, before symptoms become severe. Medications that may lead to depression include:
- Anti-hypertensives.
- Psychotropics.
- Opioid and non-opioid analgesics.
- Medications used to treat Parkinson’s disease.
- Cardiovascular medications.
- Steroids.
- Oral anti-diabetic drugs.
- Cimetidine.
- Chemotherapeutic drugs.

_**Depression alert!**_ Substances such as alcohol and illegal drugs can also cause depression.

Family history

Research shows that people whose parents suffer from depression are more likely to develop depression themselves. A patient with one parent who has depression has a 27 percent chance of developing a mood disorder, and if both parents have a history of depression, the chance increases to 54 percent. As previously noted, major depression is 1.5 to 3 times higher in first-degree relatives (e.g., parents, siblings, children) than in the general population.
Biochemical factors

Although the exact biochemical influence on the development of depression is not known, most researchers believe that some neurotransmitters, particularly norepinephrine and serotonin, are decreased in patients with depression. Under normal conditions, neurotransmitters are released to link with specific neural receptors. If an inadequate amount of neurotransmitters are released or if the number of neural receptors is decreased, depression may occur.24

Diagnosis

Diagnosis is made based on a complete history and physical and the use of psychological screening tests, such as the Beck Depression Inventory.4 A patient is diagnosed as having major depression when he or she meets the criteria identified in the Diagnostic and Statistical Manual of Mental Disorders 4th edition. Some of the criteria are:4

- A minimum of five of the following symptoms must have been present during the same two-week period and must be a change from the patient’s normal pattern of behavior and functioning:
  ○ Depressed mood most of the day, nearly every day.
  ○ Significantly reduced interest in or pleasure in activities of daily living.
  ○ Significant loss or gain of weight when not dieting.
  ○ Sleep disturbances, such as sleeping too much or not being able to sleep.
  ○ Fatigue or energy loss.
  ○ Psychomotor agitation or retardation experienced almost every day.

Antidepressant pharmacology

Mrs. Adams has been taking antidepressant medication for several years. Her physician evaluates her on a regular basis, and believes that she suffers from chronic depression. This means that Mrs. Adams may need to take medication for the rest of her life. When Mrs. Adams comes to the pharmacy to have her antidepressant prescription refilled, she asks the pharmacy technician, “How long is this going to go on? I think I should stop taking these stupid pills. I feel fine now.” Mrs. Adams should be referred to the pharmacist for appropriate patient education on the nature of her depression as well as the need to keep taking her antidepressant.

Prescription antidepressant medication is the most common treatment intervention for depression. About 80 percent of patients who take antidepressants report an improvement in their symptoms.9

Treatment length varies among patients. Treatment for an initial depressive episode may last from six months to a year, and recurrent episodes may require two years of treatment with antidepressants. Chronic depression may necessitate life-long treatment, as in the case of Mrs. Adams in the preceding scenario.9

It may take from one to eight weeks for antidepressant medication to become fully effective, depending on the dosage and the patient’s response to the medication. Patients should be thoroughly counseled on the time for treatment to become fully effective, as this time period is often difficult for patients to cope with. Drugs are generally prescribed initially at a low dose, which is gradually increased according to the patient’s tolerance and response to the drug. Patients should be taught that therapeutic effects are not immediately apparent. Sometimes the antidepressant initially prescribed is ineffective, and other drug options must be prescribed to achieve the desired therapeutic effect.2,9

Drug alert! Patients on antidepressant medication must be carefully monitored. In some cases, antidepressants may increase the risk for suicidal ideation, particularly in young adults and children.2,8,10

The prevalence of depression makes it almost a certainty that pharmacy technicians, no matter their practice setting or specialty, will care for persons who are currently experiencing this disorder. Therefore, it is imperative that all pharmacy technicians be knowledgeable about the types of medications prescribed for major depression, their actions, dosage, side effects and potential adverse interactions. This education program provides information about the pharmacological interventions for major depression, including herbal preparations.

Age-related concerns

Antidepressant use in children and adolescents requires especially careful monitoring. However, many medications have not been studied or approved for use with children. Researchers are not sure how these medications affect a child’s growing body. Physicians often will prescribe an FDA-approved medication on an “off-label” basis for children even though the medicine is not approved for the specific mental disorder or age group. Young people may have different reactions and side effects than adults and are at somewhat greater risk for suicidal ideation when taking antidepressants.

There is a black box warning on antidepressants that adolescents and young adults should be closely monitored when starting antidepressants because of the increased risk of suicidal attempts. It is very, very important that parents and other caregivers be taught...
to monitor children for any signs that they are thinking of harming themselves.2,9,19

Because older people often have more medical problems than other groups, they tend to take more medications than younger people, including prescribed, over-the-counter nutritional supplements and herbal preparations. As a result, older people have a higher risk for experiencing adverse drug interactions, skipping doses, or overdosing.

Older people also tend to be more sensitive to medications and their side effects. For example, dizziness can be a side effect of many antidepressants. Young patients may be able to handle this side effect without problems, but it can put older adults at a higher risk of falls, potentially causing injury. Even healthy older people react to medications differently than younger people because their bodies may process drugs more slowly. So lower or less frequent doses may be prescribed for older patients.2,9,17,24

Selective serotonin reuptake inhibitors (SSRIs)

The most commonly prescribed antidepressants as well as the newest classification of antidepressants are SSRIs.13,24 SSRIs are considered to be generally safe and were developed to cause fewer side effects than other classifications of antidepressants. This makes SSRIs particularly beneficial options for older patients.13,24

They work by blocking central nervous system (CNS) reabsorption (reuptake) of the neurotransmitter serotonin in the brain. This makes more serotonin available for use by the brain’s neurotransmitters. Research indicates that people who suffer from depression don’t have adequate levels of neurotransmitters in the brain, such as serotonin.24 Altering the balance of serotonin is believed to increase the brain’s ability to send and receive various chemical “messages.” This helps to alleviate depression. These drugs are referred to as selective because they primarily have an impact on serotonin, not on other types of neurotransmitters.2,9,13,19

Jason is a 16-year-old high school student diagnosed as suffering from major depression. After taking an SSRI for about two weeks, his parents notice that his energy has returned and there is an improvement in his mood and ability to concentrate. After school one afternoon, Jason attempts to take his own life by swallowing a large number of sleeping pills he found in his parents’ medicine cabinet.

All patients, especially children, adolescents, and young adults, must be monitored for an increase in suicidal thoughts and actions after starting antidepressant drug therapy. Although his depression was not fully resolved, Jason’s energy level increased and his ability to concentrate improved, so he had the energy and focus as well as depressive thoughts to plan and carry out a suicide attempt. The importance of monitoring for suicidal thoughts and behaviors cannot be stated often enough! Parents, other family members, teachers and friends may be relieved to see that a patient’s symptoms are diminishing. But an important aspect of patient/family education is to explain why the danger of suicide actually increases just as the depression starts to lift.

SSRIs may produce positive changes in as little as just a few days. For example:24
- Sleep disturbances may decrease within three to four days.
- Energy begins to return within four to seven days.
- Mood, concentration, ability to focus, and interest in life’s activities begin to improve within seven to 10 days.

The following SSRIs are used for the treatment of depression. All are now available in generic form.2,13,19,24,27
- Citalopram (Celexa).
- Escitalopram (Lexapro).
- Fluoxetine (Prozac, Prozac Weekly, Sarafem).
- Paroxetine (Paxil, Paxil CR, Pexeva).
- Sertraline (Zoloft).
- Fluvoxamine (Luvox).

Some SSRIs are available in the extended-release or controlled-release forms. These are usually designated with the letters XR, CR or SR. Such drugs enable a controlled release of medication throughout the day or even for a week at a time with just a single dose. Pharmacy technicians should use caution when interpreting orders for these medications to prevent medication errors, because there are often controlled release and instant release formulations of the same medications.2,13

Side effects commonly associated with SSRIs include:2,9,13,19
- Fatigue.
- Headache.
- Tremor.
- Dizziness.
- Insomnia.
- Dry mouth.
- Nausea.
- Diarrhea.
- Agitation or restlessness.
- Reduced libido.
- Difficulty reaching orgasm.
- Erectile dysfunction.
- Rash.
- Diaphoresis.
- Weight gain.
- Drowsiness.
- Vaginal dryness.

Edward is a 40-year-old biologist who is taking an SSRI for depression. He is experiencing a decrease in libido and other adverse sexual side effects. Edward is considering discontinuing his medication because of these adverse effects.

Drug alert! Sexual side effects are common in persons taking SSRIs. More than 50 percent of patients taking SSRIs report sexual side effects.5

Patients must be taught about side effects and when and how to report them. The potential for side effects, including those of a particularly personal nature such as sexual side effects, should be discussed with the patient before prescribing the medication. The patient’s physician should initiate this discussion.

Pharmacists should also be part of the patient’s education on SSRI side effects. Patients may not remember all information discussed with
their prescriber. It is important that other health care professionals, such as pharmacy staff, ensure that patients know about side effects and what to do if they occur.

**Pregnancy**

Jasmine and her husband are expecting their first child in six months. Jasmine has a history of major depression. She is beginning to exhibit signs and symptoms of another depressive episode. She, her husband and her health care provider need to discuss the risks and the benefits of antidepressant therapy, a conversation that ideally should have taken place before Jasmine became pregnant!

Some antidepressants may place the fetus at risk during pregnancy or the drugs may pass to the baby during breastfeeding. Paroxetine (Paxil) in particular seems to be linked to an increased risk of birth defects, including cardiac and respiratory problems. Women of childbearing age should be counseled about the risks of taking an antidepressant while pregnant. Women who are considering becoming pregnant should discuss depression treatment options with their doctor or pharmacist before becoming pregnant.

**Drug interactions**

Mr. Wallace is a 75-year-old retired banker. He is taking aspirin on a daily basis. He is also taking an SSRI for depression. His daughter finds him unconscious, and he is rushed to the hospital. He is found to have extensive internal bleeding, low blood pressure and a significantly increased coagulation time. Drugs that increase coagulation time, if taken in conjunction with an SSRI, can cause potentially dangerous increases in coagulation times. There are a number of drugs that can cause harmful effects if taken in conjunction with antidepressants. That is why it is so important to explain to patients that they must inform their health care providers and other members of the health care team about all of the medications they take, including not only prescription drugs, but also over-the-counter medications, herbal preparations, vitamins, minerals and even nutrition supplements and weight-loss products.

Many patients assume that non-prescription medications and substances such as aspirin, herbal preparations, weight loss supplements, and vitamins are not important, so they do not bother to inform their health care providers that they are taking them. Patients need to be told that any or all of these substances may interact negatively with antidepressants. When taking a patient history, it is absolutely necessary for health care providers to question patients specifically about non-prescription medications, herbs, vitamins, nutritional supplements, and weight loss products.

Drug interactions with SSRIs include:
- Aspirin products.
- Non-steroidal anti-inflammatory drugs (NSAIDs).
- Coumadin.
- Monoamine oxidase inhibitors (MAOIs)

Taking SSRIs and MAOIs within 14 days of each other can cause neuroleptic malignant syndrome. This syndrome can be fatal and is characterized by hyperthermia, rigidity, muscle cramps and tremors, and instability of the autonomic nervous system, causing such problems as unstable blood pressure, agitation, delirium or coma.

Serotonin syndrome is a serious adverse reaction to antidepressant therapy. It is most likely to occur when two or more medications that raise serotonin are used in combination. This includes the herbal supplement St. John’s wort, sometimes used in the treatment of depression. Serotonin syndrome is characterized by confusion, hallucinations, restlessness, loss of coordination, vomiting, tachycardia, irregular heart rates, dilated pupils, fever, changes in blood pressure, and unconsciousness.

**Length of treatment time and discontinuing the drug**

Recent research suggests that antidepressant drug therapy should continue for a longer period of time than the three to six months traditionally thought to be sufficient for an episode of major depression. Evidence from studies indicates that patients who take antidepressants for 18 to 24 months have fewer relapses. And some patients may need to remain on antidepressant therapy for years or even a lifetime. Patients must be instructed to take SSRIs as prescribed. They must not miss several doses and must not discontinue using the drug abruptly. When discontinuing SSRIs, the dosage must be tapered gradually under the supervision of the prescriber. Abrupt discontinuation can cause symptoms of withdrawal that include:

- Nausea.
- Headache.
- Dizziness.
- Lethargy.
- Flu-like symptoms.

**Cyclic antidepressants: Tricyclic antidepressants (TCAs) and tetracyclics**

Tricyclic antidepressants (TCAs) and tetracyclics are among the earliest identified antidepressants and are sometimes referred to as cyclic antidepressants. TCAs were first used as a treatment for depression in the mid-1950s. Although effective, they have been replaced by antidepressants that cause fewer side effects. However, TCAs and tetracyclics may still be prescribed for patients who do not respond to other classifications of antidepressants. 15 TCAs cost less than many other types of antidepressants because they have been in existence for a longer period of time and therefore are available in generic forms.

Drug alert! Cyclic antidepressants may also be used in the treatment of panic disorder, obsessive-compulsive disorder and eating disorders.

These drugs work by increasing the amount of norepinephrine, serotonin, or both in the central nervous system. These actions make more norepinephrine, serotonin, or both available in the brain, which, in turn, improves the ability of brain cells to send and receive messages. They also affect other types of neurotransmitters, which can cause a number of side effects. Route of administration varies depending on the specific cyclic. Some are available in injectable formats as well as oral routes.
Drug alert! These kinds of antidepressants may take from 10 to 14 days to cause symptom improvement, and it may take six weeks for them to reach full effect.

Cyclics used in the treatment of depression include:

- Amitriptyline (Elavil).
- Amoxapine (Asendin).
- Desipramine (Norpramin).
- Doxepin (Sinequan).
- Imipramine (Tofranil).
- Maprotiline (Ludiomil).
- Nortriptyline (Pamelor).
- Protriptyline (Vivactil).
- Trimipramine (Surmontil).

Drug alert! Some of these drugs are associated with certain side effects more often than others. For example, amoxapine (Asendin) can cause extrapyramidal symptoms such as extreme restlessness, tremors, and involuntary movements as well as neuroleptic malignant syndrome. It can also increase appetite, leading to weight gain. Maprotiline (Ludiomil) is associated with a risk for seizures (especially in patients who consume large amounts of alcohol), severe constipation and retention of urine.

Side effects of cyclics can vary depending on the specific medication. Common side effects can include:

- Photophobia.
- Dry mouth.
- Drowsiness.
- Blurred vision.
- Constipation.
- Urinary retention.
- Dizziness.
- Delayed orgasm.
- Decreased sex drive.
- Tachycardia.
- Confusion.
- Hypotension.
- Increased appetite and weight gain.
- Fatigue.
- Headache.
- Nausea.
- Seizures.

Drug alert! Remember that side effects of cyclics, as with any medication, must be discussed with the patient before initiating therapy. Health care providers need to provide enough information so that patients can make informed decisions about their plan of care. Pharmacy staff must be prepared to clarify information related to pharmacology!

Drug alert! Tricyclic antidepressants are often used to treat insomnia caused by adverse effects of drowsiness.

Pregnancy

There are a number of safety concerns associated with TCAs and tetracyclics. As with SSRIs, some cyclics may harm the fetus and may pass to the baby during breast-feeding. Women of childbearing age should be counseled about the risks to the unborn child and to the baby during breast-feeding before becoming pregnant.

Drug interactions

Adverse drug interactions are also problematic. Serotonin syndrome is a possibility, as it is with SSRIs. There are specific types of drugs that, if taken in conjunction with cyclics, can cause specific, severe problems. These include:

- CYP2D6 inhibitors.
- Barbiturates, alcohol and other CNS depressants.
- Serotonergic medications such as linezolid, MAO inhibitors, SSRIs, triptans, and St. John’s wort.
- Evening primrose.
- Cimetidine.
- Clonidine (Catapress).
- Quinolones (broad-spectrum antibiotics).

Contraindications

Cyclics are contraindicated in patients who have severe impairment of hepatic function or those who are in the acute recovery phase following a myocardial infarction. They are to be used with caution in persons who have narrow-angled glaucoma, enlarged prostate, a history of seizures, cardiac problems, thyroid problems, diabetes or impaired liver function.

Drug alert! There are some environmental factors that can have an impact on the patient taking cyclics. Smoking may lower drug levels. Patients who smoke must be particularly monitored for lack of drug effectiveness. Additionally, exposure to the sun may increase photophobia. Patients should be advised to avoid excessive exposure to sunlight.

Overdose

Marlene is a 55-year-old accountant. After being diagnosed with major depression, she was prescribed an SSRI, which did not alleviate her symptoms. After much discussion with her physician, Marlene agreed to take Tofranil, a tricyclic antidepressant. Marlene is very busy at work and at home and is concerned that the Tofranil “won’t work,” just like the other antidepressant. So she decides to take an “extra” dose several times a day. After a few days of taking “extra” doses, Marlene begins to display confusion and has a seizure at work. She is taken to the emergency department of the local hospital where her blood tests show alarmingly high levels of Tofranil.

Overdose of tricyclic antidepressants occurs over a period of several days and may cause serious consequences. It should be assumed that all patients are at risk for overdose or for taking their medications improperly. Occasionally, health care professionals assume that persons of a certain age, educational background, or socioeconomic group follow instructions or comprehend information more easily than others. This is a dangerous assumption. All persons, no matter their age, background, or education, need careful patient education and follow-up.

Possible consequences of tricyclic overdose include:

- Confusion.
- Seizures.
- Coma.
- Tachycardia.
- Cardiovascular toxicity.
• Increased reflexes.
• Agitation.
• Hallucinations.

**Drug alert!** Because of the potential for serious side effects and because older patients often have co-existing health problems, cyclic antidepressants are not favored for use in geriatric patients.

As with SSRIs, cycles should never be abruptly discontinued. Such abrupt discontinuation can cause withdrawal symptoms including nausea, headache, dizziness, lethargy, and flu-like symptoms.2,11

**Atypical antidepressants**

Atypical antidepressants, generally used when SSRIs are ineffective or when patients cannot tolerate their side effects, are referred to as atypical because they do not fit into other classifications of antidepressants. Each is unique and works in different ways with different side effects and safety concerns. However, atypical antidepressants are believed to affect neurotransmitters including dopamine, serotonin, and norepinephrine.2,11,19,24

Atypical antidepressants should not be stopped abruptly. If these drugs are abruptly discontinued, withdrawal symptoms may occur.2

Atypical antidepressants used in the treatment of depression include:2,11,24
• Bupropion (Wellbutrin, Wellbutrin SR, Wellbutrin XL).
• Mirtazapine (Remeron, Remeron SolTab).
• Nefazodone (Serzone).
• Trazodone (Oleptro).

**Bupropion (Wellbutrin, Wellbutrin SR, Wellbutrin XL)**

Bupropion’s exact action is unknown, but it is thought to weakly inhibit norepinephrine, dopamine, and serotonin reuptake. It does not inhibit MAO, but its noradrenergic or dopaminergic mechanisms may cause the drug’s anti-depressive effect.2

Bupropion is believed to be a good choice for patients who have low energy caused by depression, but it can exacerbate or cause anxiety for some people. It is not associated with sexual side effects or weight gain as often as other antidepressants.11

**Drug alert!** Bupropion is also prescribed as an aid to smoking cessation treatment.2

Side effects of bupropion include:2,11,19
• Confusion.
• Abnormal dreams.
• Insomnia.
• Headache.
• Tremor.
• Sedation.
• Agitation.
• Dizziness.
• Seizures.
• Tachycardia.
• Arrhythmias.
• Blurred vision.
• Sore throat.

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Rhinitis.
• Dry mouth.
• Constipation.
• Nausea.
• Vomiting.
• Fluctuations in weight.
• Excessive sweating.

Contraindications include:2
• Patients who have taken MAOIs within the previous 14 days.
• Patients with seizure disorders.
• Patients with history of eating disorders (increases the risk of seizures).

**Drug alert!** Bupropion dosage and frequency should be reduced in patients who have impairment of kidney functioning or mild to moderate liver cirrhosis.2,19

There are a number of potential adverse drug interactions with bupropion use. These include:2
• Other antidepressants.
• Beta-blockers.
• Nicotine replacement agents.
• Alcohol.

**Drug alert!** Excessive sun exposure may increase the risk of photosensitivity.2

**Drug alert!** Bupropion is not approved for use in children.2

**Mirtazapine (Remeron, Remeron SolTab)**

Mirtazapine is believed to act by enhancing central noradrenergic and serotonergic activity. Like bupropion, mirtazapine may help to counter sexual side effects that are caused by other antidepressants. Because it often causes drowsiness, it is usually taken at bedtime.11

Side effects include:2,11,19
• Somnolence.
• Dizziness.
• Increased appetite.
• Weight gain.
• Increased cholesterol levels.
• Increase or decrease in blood pressure.
• Decreased white blood cell count.
• Weakness.

Drug interactions include:2,19
• Avoid use within 14 days of MAOI therapy.
• CNS depressants, including alcohol.

Mirtazapine should be used with caution in patients with cardiovascular disease, cerebrovascular disease, seizure disorders, hepatic or renal impairment, or history of mania or hypomania. It is not approved for use in children.2
Raymond is at risk for complications and adverse effects because of the scenario at the beginning of this section shows that a patient like Raymond will either have to significantly change his diet or try other types of antidepressants. However, MAOIs may still be prescribed if the patient does not respond to other types of antidepressants.

Monoamine oxidase inhibitors (MAOIs)

Monoamine oxidase inhibitors (MAOIs) are a type of antidepressant that work by inhibiting the enzyme monoamine oxidase, which is involved in the breakdown of certain neurotransmitters in the brain. MAOIs are used to treat depression and other conditions such as anxiety, panic disorder, and Parkinson’s disease. MAOIs are usually prescribed when other antidepressants have not been effective or are not well tolerated.

MAOIs are a class of antidepressants that work by inhibiting monoamine oxidase, an enzyme that breaks down certain neurotransmitters in the brain. MAOIs are used to treat depression, anxiety, and other conditions caused by imbalances in neurotransmitter levels. MAOIs are known to interact with a wide range of other medications, including certain foods and supplements, so it is important for patients taking MAOIs to be aware of these interactions.

Drug alert! There have been some reports of liver failure in some patients taking nefazodone, so it should be prescribed with caution.

Side effects include:

- Orthostatic hypotension (Patients should be taught to change positions slowly, especially when they first start taking the drug).
- Dizziness.
- Headache.
- Dry mouth.
- Blurred vision.
- Confusion.
- Nausea.
- Sleepiness.
- Weakness.

Drug alert! Trazodone has been linked to a rare condition called priapism. Priapism is a persistent, painful erection not associated with sexual arousal. Patients who have an erection that lasts longer than four hours should seek emergency medical treatment.

Side effects include:

- Drowsiness.
- Confusion.
- Dizziness.
- Orthostatic hypotension.
- Dry mouth.
- Headache.
- Nausea.
- Weakness.
- Blurred vision.

Trazodone (Oleptro)

Trazodone is a rather weak antidepressant thought to work by inhibiting the CNS neuronal uptake of serotonin. It is likely to cause sleepiness, so is usually taken at bedtime. In addition to helping to alleviate depression, it also can help to reduce anxiety. Trazodone is not approved for use in children.

Drug alert! Trazodone is also prescribed for the treatment of insomnia and migraine prevention.

Side effects include:

- Drowsiness.
- Confusion.
- Dizziness.
- Orthostatic hypotension.
- Dry mouth.
- Headache.
- Nausea.
- Weakness.
- Blurred vision.

Nefazodone (Serzone)

Nefazodone is thought to work by affecting neurotransmitters to enhance communication between brain cells. It may help to decrease anxiety in addition to alleviating depression. It is likely to cause drowsiness, but is less likely to cause sexual side effects than other types of antidepressants.

Drug alert! There have been some reports of liver failure in some patients taking nefazodone, so it should be prescribed with caution.

Side effects include:

- Bradycardia.
- Dry mouth.
- Headache.
- Dizziness.
- Confusion.
- Drowsiness.
- Nausea.
- Blurred vision.
- Weakness.

There are a number of potentially dangerous drug interactions with nefazodone, because it is a potent inhibitor of liver enzymes that metabolize medications. When starting a new medication while taking nefazodone or adding nefazodone to a patient’s medication regimen, the pharmacist should be alerted to discuss drug interactions with the patient. Among them are:

- Carbamazepine.
- Statin drugs, such as simvastatin, lovastatin, and atorvastatin.
- Benzodiazepines, such as triazolam.
- MAOIs and linezolid.
- Prostate medications, such as tamsulosin, alfuzosin, dutasteride.
- Eplerenone.
- Amiodarone.
- Clarithromycin, erythromycin.
- Sirolimus, tacrolimus.

Drug alert!

Selegiline (Emsam, Zelapar) is available as a transdermal patch and is used for the treatment of Parkinson’s disease. Administering the drug via the patch may cause fewer side effects compared to the oral form of the drug.

Trazodone has been linked to a rare condition called priapism. Priapism is a persistent, painful erection not associated with sexual arousal. Patients who have an erection that lasts longer than four hours should seek emergency medical treatment.

Side effects include:

- Arrhythmias.
- Fatigue.
- Constipation.
- Diarrhea.
- Other antidepressants.
- Anti-hypertensives.
- Digoxin and phenytoin.
- MAOIs.
- Warfarin.
- Herbs, such as ginkgo biloba and St. John’s wort.
- Alcohol.

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Drug alert!

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Side effects of MAOIs include: 2,12,19
- Headache.
- Insomnia.
- Dizziness.
- Nausea.
- Arrhythmias.
- Low blood pressure.
- Diarrhea.
- Dry mouth.
- Changes in sense of taste.
- Nervousness.
- Muscle aches.
- Weight gain.
- Difficulty urinating.
- Paresthesia.
- Erectile dysfunction.
- Reduced sexual desire.
- Difficulty reaching orgasm.

Pregnancy

There are significant safety concerns associated with the use of MAOIs. As with other classifications of antidepressants, MAOIs may place a fetus at risk and may pass to the infant during breast-feeding. Women of childbearing age should be counseled about the risks to the unborn child and to the baby during breast-feeding prior to becoming pregnant. 2,12,19

Drug and food interactions

MAOIs should never be taken in conjunction with other types of antidepressants or with St. John’s wort, an herb, because of the risk of dangerously high levels of serotonin (serotonin syndrome). Ginseng in combination with MAOIs may cause headache, tremors, or mania. Concurrent use should be avoided. 2,19

Patients taking MAOIs must restrict foods that contain high levels of tyramine, which is an amino acid found naturally in the body and in certain foods and helps in the regulation of blood pressure. Interaction of tyramine and MAOIs can cause dangerous, even life-threatening hypertension. 12

Hypertensive crisis is the most serious side effect of the interaction between tyramine-containing foods and MAOIs. Symptoms include: 24
- Occipital headache (headache at the lower back of the head).
- Nausea.
- Vomiting.
- Chills.
- Sweating.
- Restlessness.
- Stiff neck.
- Fever.
- Dilated pupils.

The crisis can be so severe that it can eventually cause brain hemorrhage and death. 24

Tyramine is found in especially large amounts in aged foods or foods that contain significant amounts of yeast. Foods that have moderate to large amounts of tyramine include: 1
- All tap beers.
- Bottled or canned beer, including nonalcoholic beer.
- Aged cheeses such as cheddar, brie, and camembert.
- Aged, smoked, fermented, and pickled meats such as pepperoni, salami, and meat jerky.
- Banana peel.
- Breads or crackers that contain cheese.
- Soy products.
- Pickled herring.
- Smoked fish.
- Red and white wine.
- Yeast extracts.

Patients should be provided with a list of foods that are high in tyramine and that should be avoided. A dietary consult is recommended to help patients modify their diets to reduce their intake of tyramine.

Drug alert! As with any antidepressant, MAOIs should never be discontinued abruptly. 2

Serotonin and norepinephrine reuptake inhibitors (SNRIs)

SNRIs work by increasing brain concentrations of the neurotransmitters serotonin and norepinephrine. They are also used to treat other mental health issues, such as anxiety, fibromyalgia, and pain from diabetic peripheral neuropathy. 2,13,19

SNRIs used to treat depression include: 2,13,19
- Duloxetine (Cymbalta).
- Venlafaxine (Effexor, Effexor XR).
- Desvenlafaxine (Pristiq).

Venlafaxine is available in an immediate-release form (requiring two or three doses daily) and in an extended-release form administered once a day. 13

Drug alert! Cymbalta can also be used to treat neuropathic pain. 27

SNRI side effects include: 2,13,19
- Nausea (especially with duloxetine).
- Dizziness.
- Fatigue.
- Headache.

- Dry mouth.
- Insomnia.
- Constipation.
- Sweating.
- Elevated blood pressure (especially with venlafaxine).
- Tachycardia.
- Decreased sexual desire.
- Blurred or double vision.
- Arrhythmias.
- Erectile dysfunction.
- Difficulty urinating.

Drug interactions include: 2
- MAOIs.
- Alcohol.
- SSRIs.
Pregnancy

There are significant safety concerns associated with the use of SNRIs. As with other classifications of antidepressants, SNRIs may place a fetus at risk and may pass to the infant during breast-feeding. SNRIs should not be used in the third trimester of pregnancy. Women of childbearing age should be counseled about the potential benefits versus risks to the child before becoming pregnant.27

Antidepressant use in bipolar disorder

Sarah is a social worker who has recently relocated from a large metropolitan area to a rural community. She was diagnosed with bipolar disorder three years ago and has responded well to treatment with lithium. Shortly after relocating, Sarah begins to suffer the symptoms of a depressive episode. She is “tired of taking lithium” and decides to visit one of the two doctors in her new home, a tiny rural town. Unfortunately, Sarah decides not to tell the doctor about her bipolar disorder and only tells him about her depression, attributing it to her recent divorce. The physician prescribes an antidepressant. After a few weeks, Sarah’s depression lifts and she immediately swings into a serious manic phase, something that has not happened for over a year.

The use of antidepressants in bipolar disorder patients remains controversial. If antidepressants are used, it is generally recommended that a mood stabilizer be taken as well to prevent or reduce the risk for switching to manic or hypomanic phases or developing rapid cycling symptoms. In fact, research results from a large National Institute of Mental Health (NIMH) study showed that adding an antidepressant to a mood stabilizer “is no more effective in treating the depression than using only a mood stabilizer.”26

If antidepressants are prescribed for a patient with bipolar disorder, pharmacy staff and other members of the health care team should check to see whether the patient is also taking a mood stabilizer. If not, a discussion with the prescriber is indicated to help prevent the patient from experiencing rapid cycling between moods of depression and mania.

Herbal medicines

Samantha owns and operates a successful health club. She is very interested in being physically fit and is a big supporter of homeopathic medicine. Samantha has a family history of depression and has suffered from repeated episodes of major depression herself. She has been taking an SSRI for nearly a year with significant reduction in symptoms. However, Samantha has decided to add the herbal preparation ginkgo to her antidepressant regimen without informing her physician. After several weeks of taking both her prescribed antidepressant and ginkgo, Samantha notices that she has begun to bruise easily and bleeds for quite some time after experiencing simple injuries such as paper cuts. Samantha does not know that she is experiencing a drug interaction caused by ginkgo.

The need to ask patients about their use of herbal supplements is growing more urgent every day. It is believed that nearly half of all health care consumers in the United States are taking some type of herbal supplement, either alone or with prescription medications.22 Yet many of these patients have no idea that herbs can cause adverse effects.

A number of herbal medicines have been used in the treatment of depression. Patients should be cautioned that if they are consulting with herbal medicine practitioners, they MUST inform their other health care providers of any herbal supplements they are taking. Some patients believe that herbs are “natural” and therefore do not have adverse side effects or interactions with medicines. It is imperative that patients understand that herbs have the potential to cause dangerous, even fatal, side effects and interactions with other drugs as well as affect lab tests.

**Drug alert!** Herbs should ideally be prescribed by an herbal practitioner who is well versed and qualified in herbal medicine and who works as a partner with the patient, his or her physician, and other members of the patient’s health care team. All health care providers should ask their patients whether they are taking any type of herbal supplement to avoid dangerous side effects and drug interactions.

Some of the herbal medicines used to treat depression are described below. Note that a discussion of these herbs is not to be taken as an endorsement for their use.

St. John’s wort

St. John’s wort is available in capsule, tablet, tincture, sublingual capsule, and cream formats. It should not be used during pregnancy and lactation, nor should it be given to children. Side effects include dizziness, insomnia, restlessness, fatigue, constipation, abdominal cramps, photosensitivity, rash and hypersensitivity.20,22,25

The following drug interactions are associated with St. John’s Wort:20,22,25

- **MAOIs.**
- **Antidepressants.**

Ginkgo

Ginkgo is a tree native to China and Japan but is now also found in Europe and the United States. Its medicinal parts are the dried or fresh leaves and seeds separated from the outer layer. It is available in capsule, fluid extract, tablets, and tincture forms. It should not be used during pregnancy or lactation, nor should it be given to children. It is also contraindicated in persons with coagulation or platelet disorders, hemophilia or seizures. Side effects include

ACE inhibitors, loop diuretics, and thiazide diuretics.
Alcohol.
Amphetamines.
NSAIDs.

Persons taking St. John’s wort should limit foods high in tyramine. These include aged cheeses, beer, smoked and pickled meats, and soy products.3,22

St. John’s wort may cause increased growth hormone, decreased serum prolactin, serum iron and digoxin.23
headache, anxiety, restlessness, nausea, vomiting, anorexia, diarrhea, flatulence and rash.\textsuperscript{22,25} The following drug interactions are associated with ginkgo.\textsuperscript{22,25}

- St. John’s wort.
- MAOIs.
- Anticoagulants and platelet inhibitors.

Khat

Khat is a tree found in Africa and on the Arabian Peninsula, and the raw leaves of the tree are used to make herbal medicine. It is ingested by eating the raw leaves followed by fluids.\textsuperscript{22,25} Khat should not be used during pregnancy and lactation, nor should it be given to children. Its use is contraindicated in persons who have compromised renal, cardiac or hepatic systems.\textsuperscript{22} Side effects include:\textsuperscript{22,25}

- Tachycardia.
- Arrhythmias.
- Elevated blood pressure.
- Pulmonary edema.
- Circulatory collapse.
- Restlessness.
- Insomnia.
- Headache.
- Hallucinations.
- Hyperthermia.

Khat may affect the action of the following drugs:\textsuperscript{22,25}

- Amphetamines.
- Anti-arrhythmia agents.
- Antihistamines.
- Anti-hypertensives.
- Beta-blockers.
- Calcium channel blockers.
- Cardiac glycosides.
- Decongestants.
- MAOIs.

Mugwort

Mugwort is a perennial plant found in North America and Asia.\textsuperscript{20,22} The plant’s medicinal parts are the root and aboveground parts, especially the dried tips of the branch. Mugwort’s taste is described as pleasant and tangy.\textsuperscript{20} This herbal medicine is also used to treat anxiety, menstrual disorders, constipation, colic and diarrhea.\textsuperscript{22} In China, mugwort is used as a treatment for ulcers and burns.\textsuperscript{20} Mugwort is available as a tincture and as a tea.\textsuperscript{20,22} Mugwort is a uterine stimulant and should not be used during pregnancy. It should not be given to children, nor should women who are breastfeeding ingest it. Mugwort is contraindicated in patients who have bleeding disorders.\textsuperscript{22} Side effects include nausea, vomiting, anorexia and contact dermatitis. If patients who are also taking anticoagulants take mugwort, an increased risk for bleeding may occur. Concurrent use is contraindicated.\textsuperscript{22} Use of alcohol and other central nervous system (CNS) depressants may increase sedative effects.\textsuperscript{25}

Lemon balm

Lemon balm is a perennial plant found in the eastern Mediterranean region, western Asia, and is cultivated in Europe and North America.\textsuperscript{20,22} The medicinal parts of the plant are the oil extracted by the process of distillation, dried leaves, fresh leaves and the whole plant.\textsuperscript{20} It is available as an extract, infusion, a cream, herb powder and in capsule form.\textsuperscript{20,22} Lemon balm is used to treat agitation, sleep disturbances, migraines, attention deficit disorder, hypertension, gastric problems and bronchial conditions as well as depression. Its use as an antiviral and antimicrobial is being investigated.\textsuperscript{20} Lemon balm is contraindicated in:\textsuperscript{22}

- Pregnancy.
- Breastfeeding.
- Persons who have hypothyroidism.
- Persons who have glaucoma.

Side effects include nausea and anorexia.\textsuperscript{22} There are several potential drug interactions, including:\textsuperscript{22,25}

- CNS depressants.
- Iron salts.
- Thyroid hormone.
- Herbs such as catnip, chamomile, kava, valerian and other herbs that have sedative effects.

Yerba mate

Yerba mate is an evergreen plant found in South America. The medicinal parts of the plant are its dried leaves.\textsuperscript{22} In addition to depression, yerba mate has been used to treat fatigue, gastrointestinal problems, kidney stones, bladder stones, urinary tract infections, arthritis, constipation, and as an appetite suppressant and diuretic.\textsuperscript{22,25} In China, yerba mate is administered parenterally to treat hypertension.\textsuperscript{22} Yerba mate is available as a tincture, a tea, and an extract.\textsuperscript{22,25} Yerba mate should not be used during pregnancy or breastfeeding, nor should it be given to children. Patients with cardiovascular disease, gastrointestinal ulcers, chronic liver disease or kidney disease should not ingest yerba mate.\textsuperscript{25}
Adverse side effects associated with the use of yerba mate include:  
- Anxiety.  
- Headache.  
- Irritability.  
- Heart palpitations.  
- Liver damage.  
- Insomnia.  
- Restlessness.  
- Nausea.  
- Vomiting.  
- Anorexia.

Yerba mate has also been associated with the development of certain cancers, such as bladder, kidney and esophageal malignancies, when used for long periods of time.  

Side effects associated with medicinal use of nutmeg include:  
- Nausea.  
- Vomiting.  
- Anorexia.  
- Constipation.  
- Dry mouth.  
- Spontaneous abortion.  
- Confusion.  
- Seizures.  
- Stupor.

A number of drug interactions are possible with the medicinal use of nutmeg. These include:  
- MAOIs.  
- Anti-diarrhea medications.  
- Herbs such as safrole.

Managing depression

Patients with depression should always remember to be open with their doctors and other health care providers. Patients may feel a certain stigma associated with their condition, but should avoid letting this get in the way of proper disease management. Before going to doctor appointments, patients should be prepared to discuss their health care needs, including any questions they might have thought of since the last appointment. Any symptoms or side effects they have developed, any changes in their home lives, such as moving or changing jobs, and any questions about information they may have found online or in advertisements. It is incredibly important for patients to carry a list of the medications, supplements, vitamins, and herbs they are taking with them, especially when attending doctor appointments or picking up new medications from the pharmacy. Many drugs interact with herbal supplements and over-the-counter treatments that patients forget to add to their medication list. The importance of adding these products to the medication list should be constantly reinforced with people to prevent adverse reactions and drug interactions.

If patients are not able to manage their treatment on their own, asking a friend or family member for assistance in caregiving may be necessary. It is incredibly important for patients to include their loved ones in their mental health treatment. If family members know that a patient is starting a new medication, they will be alert to signs and symptoms that the patient is not improving or experiencing side effects to the treatment. If necessary, the caregivers can even go to doctor appointments with the patient to take notes or remind the patient of questions that have arisen since the last appointment.

Patient education

Alex is a 40-year-old car salesman who went through a divorce last year. He is interested in pursuing a serious relationship with a woman he has been seeing for several months. He has been dealing with depression and hopes that the medication (an SSRI) his physician has prescribed will help relieve his symptoms. His physician asks Alex, "Do you understand that this medicine can cause side effects?" Alex says yes, even though he doesn’t really remember what the doctor told him. He is anxious to have the prescription filled and get ready for what he believes will be an important date that evening. As he picks up his medication, Alex confides to the pharmacist, who is also a good friend, that he hopes to initiate a sexual relationship with the woman he has been dealing with.
dating. The pharmacist initiates a discussion, in private, about the side effects of SSRIs, which include sexual dysfunction. Alex is shocked and refuses to accept the medication. He returns to his physician’s office, angry and concerned and demands to know why “No one told me what this drug could do to me!”

Patient education is a crucial part of any pharmacology intervention. Pharmacy technicians must recognize gaps in patient and family education, report these gaps to the pharmacist, and facilitate the provision of necessary education. In the case of Alex, the physician did not adequately assess the patient’s knowledge of the medication prescribed. The result is an angry, concerned patient, and a physician who must deal with that anger and concern.

**Teaching alert!** It is imperative to measure the patients’ and families’ comprehension of patient education. They should never simply be asked, “Do you understand how to take your medications?” or other questions that can be answered only with a yes or no response. To assess patient and family knowledge, they should be asked open-ended questions to explain how they will take the drugs, list side effects and so on.

To measure comprehension, patients and families should be able to:

- State the name of the drugs they are taking.
- Be able to read the name of the drugs being taken and remove them from any containers that house the drugs.
- Recognize visually as well as in writing the drugs being taken.
- Identify the dose and route of the drugs being taken.
- Explain the side effects of the drugs and when to seek medical intervention for such side effects.
- State what to do if a dose is missed or if overdose occurs.
- Explain safety precautions associated with the drugs being taken. For example, if a drug lowers blood pressure, do patients and families know that it is necessary to change position slowly?
- Explain how to take drugs, for example, with food, on an empty stomach, and so on.
- Explain the importance of keeping follow-up appointments with health care providers or of having specific blood tests performed.

Note that the preceding statements all begin with a verb that can be measured. For example, the patient or family members must explain or state or identify something. They must demonstrate their knowledge in ways that can be observed or heard. If patients are asked, “Do you know the side effects your medication can cause?” They may just say “yes” to avoid admitting they don’t know or to save time. But asking patients to state the medication’s side effects requires that they must verbally demonstrate their knowledge of such side effects.

Be sure to provide patients and families with information about their medications that they can take with them. Patients and families should be given written patient education materials written in terms that the average patient and family members can understand and in a language that they can understand.

All pharmacy staff members must keep up-to-date on new medications, changes to safety recommendations by the FDA, and removal of drugs from the market. The FDA (www.fda.org) provides free updates via e-mail and text on research findings and information about drugs. Several well-known, reputable health care organizations (e.g., www.mayoclinic.com) offer extensive information about various diseases and their treatments written for patients, families and health care professionals.

Jason has been taking an antidepressant for several months. His wife has been reading everything she can find about depression and medications used for its treatment. While surfing the Internet, she reads several articles posted by people who claim that they suffered “irreversible” brain damage from antidepressants. She and Jason decide that he should stop taking his medication immediately. Jason soon experiences severe withdrawal symptoms and must be hospitalized to deal with their effects. When asked why he didn’t discuss his concerns with his physician or pharmacist, Jason replies that he thought anything published on the Internet was reliable information!

**Teaching alert!** Ask what websites patients and families are using to obtain information about their health and about their treatment regimen. Make sure that they are acquiring information from reputable sources. Patients may assume that everything they read on the Internet is accurate and trustworthy. They need to be directed to reliable health care websites.

Emphasize the importance of telling health care providers what medications they are taking, including herbs, vitamins, dietary supplements and over-the-counter medications. Explain that any or all of such agents can have serious, even life-threatening interactions.

Pharmacy staff must also be prepared to deal with patients who are not only concerned and anxious but who may be angry as well. They may be angry because they are ill, because they must take medication, because their family and friends do not understand that depression is an illness, because the disorder is affecting their ability to work or maintain interpersonal relationships, or for many other reasons.

Patients are usually angry because of a reason that has nothing to do with the pharmacy staff members. But they may “take out” their frustrations on pharmacy staff and other members of the health care team. Here are some suggestions when dealing with angry patients or family members.

- Do not take their anger personally, even though this might be difficult to do.
- Stay calm. Being angry will only escalate the patient’s (or family member’s) anger.
- Speak in a normal tone of voice. Raising your voice will only make the situation worse.
- Whenever possible, try to resolve the problem in a private setting. Avoid a public scene that other patients can overhear and that will probably upset people who have nothing to do with the problem.
- Stay at eye level with the patient or family member. Maintain eye contact.
- Encourage the person or persons who are angry to sit down. The act of sitting down in a private setting and speaking in a calm tone of voice may be enough to defuse the situation.
- Show that you are interested in helping the patient and family resolve their issues.
- Acknowledge that the patient or family member is upset. For example, suppose the patient has had to wait a long time for a prescription to be filled. Apologize for the inconvenience and explain how you hope to avoid long waits in the future. Don’t offer excuses or become defensive. Sometimes simply acknowledging their concerns and expressing regret for whatever is upsetting them can defuse an unpleasant situation.
- Address the patient or family by name. Using their names indicates interest. Be respectful. Address them as Mr., Mrs., or Ms. Do not use first names unless invited to do so. Never address a patient or family member as “honey,” “dear,” “sweetheart,” or other name that can be interpreted as condescending. Showng respect is very important when attempting to defuse an unpleasant situation.
- Be aware of your body language. Do not clench your fists or cross your arms. Avoid frowning, rolling your eyes, or other facial expressions that indicate anger, disgust, or amusement. Never give the impression that you are laughing at the patient or family member.
- Be objective. Do not judge patients by their lifestyle, age or socioeconomic status.
- Assess whether the patient or family member has the potential to become violent. Watch for agitated body movements or body language that indicates the potential for violence, such as clenched fists.
● Have a plan for maintaining your own safety. Although this does not happen frequently, patients or family members can become physically violent. If speaking privately with a patient, do not allow him or her to get between you and the door or other exit. Always be sure you can get away from a potentially dangerous situation. Never meet privately with someone unless there is another staff member nearby. You need to be able to summon help quickly. Before meeting privately with patients or families, be sure to tell a colleague where you will be and with whom you will be meeting. Know the policies and procedures for dealing with potentially dangerous situations and for dealing with angry patients. Preparing for these kinds of situations in advance will help you to cope with them more easily.

Finally, remember that patients and their families are equal partners with their health care providers. They must be encouraged to express their concerns and to ask questions. Their knowledge of their treatment plan, particularly their medication regimen, must be objectively assessed. Compliance is not possible unless and until patients and families believe in and are compliant with the treatment plan that has been prescribed.

Final Examination Questions

Antidepressant Drug Therapy for Pharmacy Professionals

Choose the best answer for questions 1 through 5 and mark your answers online at Pharmacy.EliteCME.com

1. There are several different types of depressive episodes. Which of the following is among them?
   a. Single depressive episode.
   b. Recurrent depression.
   c. Seasonal affective disorder.
   d. All of the above.

2. Which of the following is considered to be a possible cause of depression?
   a. Use of anti-parkinsonian medications.
   b. A diet containing too much sugar.
   c. Use of aspirin.
   d. A diet high in protein.

3. Which of the following medications is not an SSRI?
   a. Fluoxetine.
   b. Duloxetine.
   c. Paroxetine.
   d. Fluvoxamine.

4. Which of the following antidepressants is not an atypical antidepressant?
   a. Trazodone.
   b. Nefazodone.
   c. Duloxetine.
   d. Bupropion.

5. Which of the following herbs is commonly used for the treatment of depression?
   a. Cayenne.
   b. St. John’s wort.
   c. Soy.
   d. Melatonin.

References


