Diagnosis and treatment of depression in adolescence

by Jennifer Hagman, MD

In September 2000, US Surgeon General David Satcher, MD, PhD, called a national conference to focus on children's mental health. The main findings of his report, released in January 2001, emphasize that the efficacy of mental health treatment is well documented and that a range of treatments exist for most mental disorders. The report issues a call to action, and underscores the urgent need for providers to be able to identify and initiate treatment or referral for depression and other mental illnesses in children and adolescents.

In May 2001, Dr. Satcher announced a national campaign to prevent suicide and urged that suicide risk screening become part of every primary health care practice. The surgeon general's data demonstrate that the incidence of suicide attempts peaks during midadolescent years. He also observes that suicide is the third leading cause of death in adolescents, following closely behind accidents and homicide. It is estimated that one in ten teens contemplate suicide, and nearly a half-million teens in the United States make a suicide attempt each year.

Mood disorders significantly increase the risk of suicide. The hormonal changes of puberty are widely believed to be associated with parallel changes in brain neurochemistry. Increased prevalence rates for mood disorders and other mental illnesses after puberty are thought to be related to these changes. The onset of puberty leads to increasing rates of depression; the prevalence of depression in adolescence is around 8%. The rate of depression in females begins to approach adult levels by age 15. The lifetime risk of depression ranges from 10% to 25% for women, and 5% to 12% for men.

ROLE OF THE PEDIATRICIAN

Individuals with depression almost always present initially to their primary care physician. Thus, it is important that pediatricians are able to identify patients with depression and initiate evaluation and treatment. It is not uncommon for the pediatrician to be the first person who has the opportunity to diagnose depression, and it is increasingly common for primary care physicians to be responsible for the medication management of depressive disorders. Many patients will go undiagnosed and untreated if their clinicians are not prepared to consider the diagnosis of mental illness.

Learning Objectives

After reading this issue, pediatricians will understand their role in the diagnosis and management of depression. They will be able to:

* Describe the epidemiology and natural history of depression in adolescence
* Discuss approaches to screening for depression
* Recognize common clinical presentations, differential diagnosis, and comorbidities of adolescent depressive disorders
* List DSM-IV-TR criteria for diagnosis of major depressive disorder
* Discuss criteria for referral and/or hospitalization of the depressed adolescent
* Describe the pediatrician's role in management of depression, including use of medications
The diagnosis and treatment of depression during adolescence can be challenging. A depressive episode in adolescence can significantly impair social, emotional, and academic potential at a critical point in development. Children and adolescents are more likely to present with somatic symptoms and school avoidance due to stomachaches, headaches, fatigue, and other generalized physical complaints, than to present with awareness of a clinical depression.

Some families may be reluctant to seek help from a therapist or psychiatrist, or to accept the need for a referral, due to perceptions that mental illness carries a stigma, or that a record of treatment for mental illness could have an adverse effect on future opportunities in education or employment. The pediatrician can be helpful in providing information to decrease anxiety about the diagnosis and potential interventions.

**ASSESSMENT AND SCREENING**

Adolescents struggle to define themselves within their peer groups, families, and communities as they adjust to the changes of puberty and the social interactions that come with the teen years. Sorting through changes in mood, attitude, and behavior that characterize adolescence to determine the nature of a suspected mental health problem can be a challenge for parents and clinicians. Adolescents usually tell their friends more than they tell their parents, and are often reluctant to talk with adults about their inner thoughts.

All of these factors, combined with hormonal changes, place the adolescent at increased risk for depression. Persistent change in mood lasting more than 2 weeks should alert the family and physician to screen for the presence of a depressive episode.

Because the pediatric office visit is often short, the method used to screen must be brief yet effective. Questionnaires support the screening process, but they should not take the place of direct assessment. If the pediatrician identifies symptoms that may indicate a depressive disorder during the course of a routine pediatric visit (Table 1), further assessment is required. If this cannot be accomplished during the scheduled visit, a longer office visit should be arranged within 7 days.

Screening must include assessment for current suicidal ideation, and intent of self-harm if suicidal thoughts are present. A more thorough assessment by a mental health professional is immediately warranted for adolescents who report current thoughts about killing themselves (suicidal ideation), or someone else (homicidal ideation). A history of suicide attempts, aggressive behavior, or substance abuse increases the risk that a patient will act upon these thoughts.

Emergency assessment of suicidal or homicidal ideation can be accomplished by referral to the closest emergency room. Pediatricians should be aware of the services available for psychiatric crisis assessment in the community. Awareness of the mental health provisions of patients’ insurance coverage will facilitate referrals for further evaluation and treatment and can be helpful in preparing the family for the crisis assessment process.

**Differential diagnosis**

Underlying physical disease or illness that can produce depressive symptoms should be ruled out. The clinical assessment may include laboratory studies for hypo- or hyperthyroidism, anemia, and mononucleosis, in addition to any other conditions suggested by physical symptoms. Substance abuse, specifically marijuana and opiate abuse, can also lead to symptoms of depression. Stimulants, cocaine, and certain “club drugs,” such as Ecstasy (MDMA), can cause a depressive syndrome following episodes of use. Teens may also try to “self-medicate” depressive symptoms with alcohol or drugs.

**Symptoms of Depression**

If screening raises suspicion about the possibility of depression and the physi-**TABLE 1**

<table>
<thead>
<tr>
<th>Screening Questions</th>
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<tbody>
<tr>
<td>Have you lost interest in things you used to enjoy?</td>
</tr>
<tr>
<td>Have you had any change in your sleep patterns?</td>
</tr>
<tr>
<td>Have you had any thoughts about hurting yourself?</td>
</tr>
<tr>
<td>Have you been feeling sad, down, or depressed much of the time?</td>
</tr>
</tbody>
</table>

**How to ask about suicidal ideation**

In the context of assessing for depression, it is important to ask, “Have you had any thoughts about not wanting to be alive?” If there is an affirmative response, continue with, “Have you had any thoughts about suicide, or about hurting yourself?” Also explore how they would hurt themselves, or, if they have contemplated suicide, what ways they have thought about attempting it.

Patients who have thought specifically about how to hurt or kill themselves present a psychiatric emergency. Teens who are actively suicidal should be evaluated the same day at the nearest emergency room. If the teen is in therapy, the parent and physician should contact the therapist to make them aware of the situation. Whether or not the crisis is immediate, it is important to let the teen know that you are concerned and that you want to help. The guardian should be made aware of the teen’s suicidal thinking and further assessment should be urgently arranged. Confidentiality must be breached in this circumstance.
Depressed adolescents often withdraw from family and friends and spend increasing amounts of time alone. They become less interested in activities they used to enjoy and may seem apathetic. Lowered self-esteem is reflected in negative comments about themselves, decreased attention to hygiene, and a pessimistic view of the future. Suicidal ideation (e.g., "it would be easier to be dead") often evolves in the context of a depressive episode.

**Diagnosis of depression and other mood disorders**

The *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (DSM-IV-TR), published by the American Psychiatric Association, provides the diagnostic criteria for mood disorders and other mental illnesses. The American Academy of Pediatrics' guide, *Diagnostic and Statistical Manual for Primary Care: Child and Adolescent Version (DSM-PC: Child and Adolescent Version)* is also an excellent diagnostic reference.

Major depressive disorder, dysthymic disorder, adjustment disorder with depressed mood, and depression not otherwise specified (NOS) are the four most common mood disorder diagnoses found in the adolescent age group, followed by bipolar disorder and mood disorder NOS.

A DSM-IV-TR diagnosis of major depression requires that five of nine symptoms be present most of the day every day for 2 weeks (Table 2). Dysthymic disorder is a depressive condition of lesser intensity, present for at least 1 year in children and adolescents (2 years

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**TABLE 2**

**Criteria for Major Depressive Episode**

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

**Note:** Do not include symptoms that are clearly due to a general medical condition, or mood-incongruent delusions or hallucinations.

1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note:** In children and adolescents, can be irritable mood.

2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others).

3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note:** In children, consider failure to make expected weight gains.

4. Insomnia or hypersomnia nearly every day.

5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).

6. Fatigue or loss of energy nearly every day.

7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).

8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).

9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.

B. The symptoms do not meet criteria for a mixed episode.

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

E. The symptoms are not better accounted for by bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

in adults). Adjustment disorders develop in response to a specific stressor and do not last longer than 6 months. Diagnoses of depression NOS and mood disorder NOS can be used when there is clearly a mood disorder present, but the DSM-IV-TR criteria are not fully met or do not cluster in the required patterns. The criteria for bipolar mood disorder requires the occurrence of a manic episode. Individuals with bipolar mood disorder often have had one or more major depressive episodes prior to the onset of manic symptoms.

It is always important to screen for bipolar affective disorder in an adolescent whom you believe may be depressed. Up to 30% of those diagnosed with child-onset and adolescent-onset depression (also known as early-onset depression) may develop the spectrum of symptoms diagnosed as bipolar affective disorder (Strober et al, 1993). A mixed manic phase of bipolar disorder in childhood or adolescence is likely to present with irritability, hyperactivity, decreased sleep and grandiose thinking or psychotic symptoms. The possibility of bipolar disorder is increased for the child or adolescent who presents with depression, a family history of bipolar affective disorder, a personal history of attention deficit/hyperactivity disorder (ADHD), and the presence of psychotic symptoms. These cases warrant referral to a child psychiatrist for further assessment and diagnostic clarification.

Some individuals with unsuspected bipolar affective disorder may experience agitation, decreased sleep, and even manic episodes when treated with an antidepressant. If the pediatrician suspects that the episode is related to undiagnosed bipolar disorder, the antidepressant should be stopped and treatment with a mood stabilizer (such as lithium, valproate or carbamazepine) may be indicated. This usually warrants a consultation with a child psychiatrist.

**Other mental health diagnoses associated with depression**

Comprehensive assessment should include consideration of comorbid conditions in addition to the primary diagnosis of depression. Another mental illness may be present in up to 40% of adolescents diagnosed with a depressive disorder. Potential mental health comorbidities include anxiety disorders, substance use disorders, disruptive behavior disorders, eating disorders, and ADHD. Another 30% of adolescents with depression may later develop bipolar disorder.

**MANAGEMENT**

Interventions for the treatment of depression in adolescence include psychotherapy, medication, and careful attention to school, home, peer, and work-related stressors. Interventions should be designed to address the depressive diagnosis, severity of episode, and the specific needs of the child and family.

If a diagnosis of depression is suspected or supported, the pediatrician must decide whether the patient requires referral to a mental health specialist. This decision depends on the pediatrician’s comfort level with diagnosing and treating depression. Optimal treatment for the adolescent with a diagnosis of depression is counseling combined with assessment for possible treatment with medication (Table 3). Not all adolescents will require medication. Ideally, the pediatrician will have access to child psychiatrists with whom he or she can confer regarding referrals and medication management. The assessment of severity of depression and response to therapy should be ongoing through the course of treatment. In some cases, antidepressants are started when mood symptoms have not significantly improved with psychotherapy.

If psychotic symptoms are present (auditory or visual hallucinations and/or paranoia), referral to a psychiatrist is strongly recommended. Psychotic symptoms can be associated with substance use, depression, schizophrenia, bipolar disorder, and post-traumatic stress disorder. Thorough assessment to clarify the differential diagnosis is essential to initiate appropriate interventions when psychotic symptoms are present. Common reasons for referral are presented in Table 4.

Consideration of a higher level of care is necessary when symptoms include suicidal ideation or the adolescent is unable to function as a result of the depressive episode. Options include inpatient hospitalization and day treatment.

**Individual and family psychotherapy**

A referral for psychotherapy should be made for all adolescents who are diagnosed with depression. Once a referral is made, it is imperative that the managing physician communicate regularly with the therapist.

Psychiatrists, psychologists, social workers, licensed professional counselors, and clinical nurse specialists may provide individual, family, or group therapy. It is important, whenever possible, to be familiar with the training of each provider, and to be knowledgeable.

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**TABLE 3**

<table>
<thead>
<tr>
<th>Interventions for the treatment of depression</th>
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<tbody>
<tr>
<td>Adjustment Disorder</td>
</tr>
<tr>
<td>Mild Depression</td>
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<tr>
<td>Moderate Depression</td>
</tr>
<tr>
<td>Severe Depression</td>
</tr>
<tr>
<td>refer for psychotherapy</td>
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<tr>
<td>refer for psychotherapy</td>
</tr>
<tr>
<td>refer for psychotherapy</td>
</tr>
<tr>
<td>medications usually not needed</td>
</tr>
<tr>
<td>medications may not be needed</td>
</tr>
<tr>
<td>consider antidepressant medication</td>
</tr>
<tr>
<td>strongly encourage antidepressant medication</td>
</tr>
</tbody>
</table>

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4
TABLE 4

When to consider consultation with a psychiatrist?

Diagnosis is not clear
Pediatrician feels further assessment is needed
Pediatrician believes medications may be needed, but will not be prescribing
Pediatrician has started medications and needs further psychopharmacologic consultation

- Individual, family, and/or group psychotherapy is needed
- Psychotic symptoms (hallucinations, paranoia) are present
- Bipolar affective disorder is suspected.

Immediate referral for crisis assessment is needed:

- Current suicidal thoughts are present
- Current homicidal intent is present

about their experience relevant to the treatment of children and adolescents.

The chance that a family will follow through with the referral for therapy is greatly increased if the pediatrician makes referrals to therapists that he or she knows, or can review the managed care provider list and make recommendations.

Individual therapy can help the teen develop increased understanding of his or her skills to cope with the depressive episode and related life stressors or circumstances. Family therapy facilitates improved communication patterns within the family structure. If dynamics between the parents are contributing to the teen’s symptoms and impeding recovery, marital counseling may be recommended, or individual therapy for one or both parents. Group therapy, sometimes available at school, can be a helpful component of care for depressed adolescents, who may see themselves as alone and their problems as unique, with no one else who can understand. School counselors can provide support in the school environment and assist with assessment of academic functioning and school-based peer relationships during the depressive episode and recovery process.

Education is often necessary to help families understand the depression diagnosis so they can help in the recovery process. Discussion about what the depression diagnosis means, combined with handouts on the diagnosis and references for additional information, is helpful to parents, siblings, and the teenager (See resource page for families).

Rating scales

- Rating scales, such as the Beck Depression Inventory-II (BDI-II) and the Reynolds Adolescent Depression Scale (RADS), provide an objective assessment of depressive symptoms.
- Scales are useful tools to monitor symptom severity and improvement over the course of treatment. Scales are also helpful to patients who can use them to follow how their symptoms have changed over time.

Medication

The natural course of an untreated depressive episode can range from 9 months to 2 years. The effective use of antidepressant medications can lead to remission of symptoms within 1 month or less. In general, antidepressants are recommended for all moderate to severe cases of major depression, and should be considered for diagnoses of dysthmic disorder. Medication is generally not required for the treatment of adjustment disorder. Treatment of mood disorder NOS and depression NOS require further assessment, initiation of psychotherapy, and monitoring of symptoms over time to determine if an antidepressant or mood stabilizer is needed.

Studies examining the use of tricyclic antidepressants (TCAs) for the treatment of depression in children and adolescents have not demonstrated efficacy compared to placebo. The TCAs are also cardiotoxic, and thus quite dangerous in overdose situations, and they require medical monitoring of EKG, blood pressure, pulse, and blood levels. The continued development of the noradrenergic system during the adolescent years is thought to be the reason for the lack of efficacy of these medications in children and adolescents. The serotonergic system is thought to be relatively stable throughout development, thus leading to what appear to be more positive results in psychopharmacologic studies of selective serotonin reuptake inhibitors (SSRIs) in this age group. (Findling et al, 1998; Friedman et al, 1998).

Due to greater comparative efficacy and safety, the SSRIs have replaced tricyclic antidepressants as the primary agents prescribed for the treatment of major depression in adolescents. Agents that target primarily serotoninergic and noradrenergic systems (eg, bupropion, mirtazapine, nefazodone and venlafaxine) are generally second-line choices. Although no antidepressants are approved by the Food and Drug Administration for the treatment of major depressive disorders in children or adolescents, studies supporting the use, safety, and efficacy of SSRIs in adolescence have been published.

SSRIs are generally well tolerated, treatment is relatively easy to start, and therapy is not complex to monitor. The most common side effects include nausea, diarrhea, headache, insomnia, psychomotor activation, and decreased libido. Taking the medication in the morning with breakfast can minimize these side effects. No blood levels are required and there are no cardiac, renal, hepatic, or hematologic indices to follow. The SSRIs are not lethal in overdose and there have been no reported deaths due to SSRIs alone. SSRIs are relatively potent inhibitors of the cytochrome P450 isoenzymes in the liver, which metabolize many medications. If an SSRI is given in combination with a medication that is metabolized by the P450 system, metabolism of the other medication will be decreased (Table 5) leading to
higher blood levels of the other medication. This is a consideration in the case of the patient who is on more than one medication. The order of potency of P450 2D6 binding is: paroxetine > fluoxetine > sertraline > fluvoxamine > citalopram.

The SSRIs are usually started at half the recommended adult dose and titrated upward in 1 week intervals as necessary for optimal therapeutic response. Table 6 offers guidelines and maximum doses of each medication. The average effective dose for each medication varies with the individual. Once at the target dose, improvement in symptoms should be expected within 2 to 4 weeks. If there is not significant improvement in depressive symptoms at 4 weeks, the dose should be increased, or a different medication considered, or referral made to a specialist for further assessment. It is important to educate the adolescent and family about the delayed onset of symptom improvement and the need to continue the antidepressant for 6 to 9 months.

Selecting and managing medications
Choice of medication is based upon symptom profile, history of positive or negative response to other psychopharmacologic agents, family history, and reliability of the person taking the medication and those monitoring it.

The SSRIs, although largely comparable, have slightly different side effect profiles, and patients may tolerate one better than another. None of the SSRIs or alternative antidepressants are addictive. Sedation may occur in up to 10% of patients treated with an SSRI. Paroxetine may be more sedating, and thus better tolerated when taken at bedtime. Fluoxetine has the longest half-life.

Alternative antidepressants are generally recommended after two SSRIs have been tried and remission of symptoms has not been achieved (Hughes et al., 1999). Comorbid diagnoses may also influence the selection of antidepressant. Fluvoxamine has FDA approval for the treatment of adult and pediatric obsessive-compulsive disorder.

Sertraline has FDA approval for treatment of adult depression, post-traumatic stress disorder and panic disorder, and pediatric and adult obsessive-compulsive disorder. Fluoxetine has FDA approval for the treatment of adults for bulimia nervosa and premenstrual dysphoric disorder. In addition to depression, Paroxetine has FDA approval for treatment of depression and panic disorder in adults. Bupropion has FDA approval for the treatment of depression and smoking cessation in adults.

Bupropion should not be prescribed for adults with eating disorders due to increased risk of seizure in these individuals.

When possible, it is optimal to let the adolescent participate in the decision about which medication to take. If insurance or formulary issues are not a concern and an SSRI is the medication category of choice, the pediatrician can present several choices. A teen who knows that his or her parent or a friend has been treated for depression with a particular medication may select or decline a medication on that basis alone.

Antidepressants should be continued for at least 6 to 9 months after a therapeutic response occurs. Patients should be specifically told not to unilaterally discontinue their medication once they are feeling better. On the other hand, some people are reluctant to stop taking an antidepressant when it appears to be an appropriate time to do so. It is best to discuss a plan for stopping medications.

It is wise to discontinue medications during a time of minimal psychosocial stress, such as during a school vacation. This makes it easier to assess sustained improvement or relapse, and reduces the potential impact of a recurrence of depressive symptoms. Sertraline and paroxetine have relatively short half-lives and should be tapered by reducing the dose by one-half every 5 to 10 days, based on the patient’s tolerance. Some patients report dizziness and flu-like symptoms when stopping an SSRI abruptly.

When medication is decreased or stopped, it is critical to educate the teen and family on how to monitor for return of depressive symptoms. Early intervention can prevent the descent into an incapacitating major depressive episode. Over 50% of individuals with childhood or adolescent onset depression will experience another depressive episode later in life.

Informed consent
Informed consent is complicated in child and adolescent psychopharmacology due to the lack of safety and efficacy data for many medications. Information to be shared regarding side effects and efficacy is often based on the available data from studies primarily on adults, or on studies of the medication used for other diagnoses in pediatric age groups. The clinician’s experience with the medication can also be shared when discussing efficacy and side effects.

Informed consent involves explaining and discussing possible common side effects and any possible side effects that should be closely monitored. This should be documented in the patient record. The expected benefit of the medication and time frame in which benefit should be expected should also be discussed. How long the medication should be taken, and the basis for an eventual decision to discontinue it, should be reviewed as well. It is especially important to discuss the course of a depressive episode, in order to give the patient and family a basis for realistic expectations for recovery. Those who

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**TABLE 5**

<table>
<thead>
<tr>
<th>Examples of Medications Metabolized by Cytochrome P450-2D6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta Blockers</td>
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<tr>
<td>Antihypertensics</td>
</tr>
<tr>
<td>Codeine</td>
</tr>
<tr>
<td>Amphetamine</td>
</tr>
<tr>
<td>Methylphenidate</td>
</tr>
<tr>
<td>Desipramine</td>
</tr>
<tr>
<td>Nortriptyline</td>
</tr>
<tr>
<td>Venlafaxine</td>
</tr>
</tbody>
</table>
medications used to treat depression in adolescents

The SSRIs are usually given once a day in the morning with breakfast. One in ten individuals may experience sedation and prefer to take the medication at bedtime. The alternative antidepressants and fluvoxamine are usually given in BID dosing. Bupropion and venlafaxine are now available in a sustained/extended release form.

<table>
<thead>
<tr>
<th>Generic</th>
<th>Trade name</th>
<th>Adolescent Starting dose</th>
<th>Target dose (Average effective dose)</th>
<th>Maximum dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSRIs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citolopram</td>
<td>Celaax</td>
<td>20 mg QAM</td>
<td>20 mg QAM</td>
<td>40 mg QAM</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>Prozac</td>
<td>10 mg QAM</td>
<td>20 mg QAM</td>
<td>60 mg QAM</td>
</tr>
<tr>
<td>Fluvoxamine</td>
<td>Luvox</td>
<td>50 mg QHS</td>
<td>100-150 mg QD</td>
<td>100 mg BID</td>
</tr>
<tr>
<td>Paroxetine</td>
<td>Paxil</td>
<td>10 mg QAM</td>
<td>20 mg QAM</td>
<td>60 mg QAM</td>
</tr>
<tr>
<td>Sertraline</td>
<td>Zoloft</td>
<td>25 mg QAM</td>
<td>50 mg QAM</td>
<td>150 mg QAM</td>
</tr>
<tr>
<td>Alternative Antidepressants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bupropion</td>
<td>Wellbutrin</td>
<td>75 mg QAM</td>
<td>150 mg BID</td>
<td>200 mg BID</td>
</tr>
<tr>
<td>Bupropion SR</td>
<td>Wellbutrin SR</td>
<td>100 mg QAM</td>
<td>100 mg BID</td>
<td>150 mg BID</td>
</tr>
<tr>
<td>Mirtazapine</td>
<td>Remeron</td>
<td>7.5 mg QHS</td>
<td>15 mg QHS</td>
<td>30 mg QHS</td>
</tr>
<tr>
<td>Nefozodone</td>
<td>Serzone</td>
<td>50 mg QHS</td>
<td>100 mg BID</td>
<td>300 mg BID</td>
</tr>
<tr>
<td>Venlafaxine</td>
<td>Effexor</td>
<td>37.5 mg QAM</td>
<td>75 mg BID</td>
<td>150 mg BID</td>
</tr>
<tr>
<td>Venlafaxine XR</td>
<td>Effexor XR</td>
<td>37.5 mg QAM</td>
<td>150 mg QD</td>
<td>225 mg QD</td>
</tr>
</tbody>
</table>

*Published studies support the use of these medications in adolescents, although no antidepressants have FDA approval for treatment of major depression in this age group.

understand the expected course will be more motivated to comply with the medication regimen to prevent relapse. Dulcan's (1999) book, which features medication information handouts for psychotropic medications prescribed for children and adolescents, is a useful resource in counseling adolescents and families.

State laws vary regarding the age for providing informed consent. Regardless of state law, both the adolescent and the guardian should understand the risks and benefits of the proposed medication, agree to the treatment regimen, and provide informed consent.

MANAGED CARE ISSUES

Almost all managed care plans have "carved out" mental health benefits. This means that mental health and medical benefits are managed differently. Often a different managed care organization manages the mental health benefit. Because of variations in reimbursement based on geography, practice structure, capitation, etc. primary care physicians providing mental health services should consult local experts and investigate strategies for obtaining reimbursement for services they provide. Many states have established “parity” for some mental disorders. Parity mandates that the same benefits are available for the treatment of mental illness as for physical illness. In many states, major depression and bipolar disorder, which are both established as biologically based illnesses, are included under parity.

SUMMARY

Thousands of children and adolescents suffer with undiagnosed and untreated depression each year. Suicide is directly linked to depression and is a preventable cause of death in adolescence. It is essential that pediatricians be able to identify depression and suicidal ideation and organize appropriate treatment. More pediatricians are becoming comfortable initiating psychopharmacologic interventions with an antidepressant while making a referral for further assessment and therapy. It is important that the pediatrician know when to make a referral and how to continue the psychopharmacologic intervention if started by a consulting psychiatrist.

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Recommended Reading

American Academy of Pediatrics. Surviving Coping with Adolescent Depression and Suicide: Guidelines for Parents. (Brochures available from the Academy in packets of 100. 1-888-227-7770)


Beck AT, Steer RA. Brown GK. Beck Depression Inventory-II. San Antonio, TX: The Psychological Corporation. (1-800-872-4726 or www.psychcorp.com)


Reynolds WM, Reynolds Adolescent Depression Scale (RADS). Lutz, Florida: PAR-Psychological Assessment Resources, Inc. (1-800-331-8378 or www.parinc.com)


Child and adolescent psychopharmacology textbooks and newsletters


Adolescent Health Update

The American Academy of Pediatrics, through its Section on Adolescent Health offers Adolescent Health Update to all AAP Fellows.

Comments and questions are welcome and should be directed to: Adolescent Health Update, American Academy of Pediatrics, P.O. Box 927, Elk Grove Village, IL 60009-0927, or send an e-mail to adolhealth@aap.com.

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