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The Pediatrician's Role in the Diagnosis and Treatment of Substance Abuse

Elizabeth Meller Alderman, MD,* S. Kenneth Schonberg, MD,† and Michael I. Cohen, MD‡

FOCUS QUESTIONS

1. How common is the use of illicit substances among adolescents?
2. Which particular responses during the interview of an adolescent suggest a substantial risk for substance abuse?
3. What are the signs of the neonatal abstinence syndrome?
4. What are the indications for and limitations of urine toxicology screening?
5. Which factors mandate residential treatment for a substance-abusing adolescent?

The United States has the highest rate of drug abuse of all industrialized countries. Patterns of lifetime substance abuse usually are established during the vulnerable adolescent years. Thus, the effects of this behavior extend beyond adolescence and are seen among adults and, consequently, in neonates. Newborns addicted to cocaine, opiates, and alcohol are being cared for in increasing numbers by pediatricians. With the role of the pediatrician expanding to include the treatment of patients from birth through the age of 21 y, it is increasingly evident that the pediatrician has a crucial role in the prevention, diagnosis, and treatment of substance abuse. The impor-

ance and urgency of addressing drug and alcohol use and related problems during a routine office visit with an adolescent or new parent are obvious. Additionally, the importance of providing anticipatory guidance for the parent of the school-aged child cannot be overemphasized.

Adolescents usually do not come to physicians with an overtly expressed complaint of drug abuse, and young parents do not disclose voluntarily their own substance abuse during pregnancy. The challenge for the pediatrician is to be alert to the warning signals available from the history and physical examination that point to a potential substance abuse problem, and then to counsel patients effectively, refer them to appropriate treatment centers, and provide close follow-up care.

Most adolescents are well adjusted, and many only use drugs and alcohol on an intermittent basis as part of social activities or as an experimental experience. Data from several studies reveal that 92% of all teens have tried alcohol, 47% have tried marijuana, and 12% have tried cocaine by their senior year in high school. In a minority of cases, drugs and alcohol interfere with school and with family and peer relations, and may place these teens in risky situations. Most adolescents, but especially younger ones, are often unable to link long-term consequences with current behavior and peer acceptance. In addition, because most teens are still socially immature and cognitively unsophisticated, they often make errors in judgment when even mildly impaired by drugs or alcohol in situations in which the margin for error is quite narrow. Typical situations for teens in which intoxication increases risk include driving an automobile, sexual activity, confrontations and altercations, delinquent behaviors, and transitory depression that might lead to a self-destructive act.

The Interview

ADOLESCENTS

The pediatrician should be able to distinguish between the experimental, casual, or recreational user and the problematic or addicted abuser by conducting a carefully structured interview. Interviews should be conducted with the teen and parent(s) separately. Some physicians prefer to use a questionnaire to obtain the information quickly from the adolescent while he or she is in the waiting room. With either technique, the pediatrician should establish an atmosphere of trust and ensure confidentiality. The physician must be a good listener who is not judgmental. Teens will, in general, respect the physician's authority and knowledge as long as the pediatrician does not appear condescending.

At regular intervals, beginning at the age of 10 or 11 y, and especially during health-care maintenance visits, the pediatrician should ask about what drugs are used, how frequently they are used, and at what age drug use was initiated. Surveys of high school seniors have indicated that one third of the girls and nearly half of the boys have tried alcohol by 12 years of age. Inquiries should be made about the setting in which drugs are used. The degree of intoxication should be assessed and a determination should be made regarding whether drug use has ever put the teen in risky situations. Ask whether friends use drugs or drink, and if parents do. A positive response regarding use by family members or friends is a "red flag," even if a teen denies his or her own substance abuse; studies have suggested a genetic basis to alcoholism, and the presence of drugs in a teen's environment is predictive of his own use.

Inquire about school progress and vocational and educational goals. A recent lapse in attendance or falling grades may signal a disruption

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caused by drugs. Determining the nature of the teen's relationship with parents and friends and any sexual relationships can be an indirect way of finding out about substance abuse. Any teen who engages in antisocial or delinquent behavior also is more likely to use drugs. An important, although sometimes uncomfortable, question is whether a teen ever has been physically or sexually abused. There is a strong correlation between previous abuse and substance use during adolescence.

It is crucial to screen for depressive symptoms, such as weight loss, change in sleep habits and energy level, depressed mood or mood swings, and suicidal ideation or attempts. Serious drug abuse is often a symptom of a pervasive developmental dysfunction and is a deviant attempt at coping with problems such as depression. Mood swings may be due to drugs or an underlying psychological problem that predisposes the teen to substance abuse. Teens are more vulnerable to the abuse of alcohol and drugs during times of transition (such as divorce, moving to a new neighborhood, experiencing a death in the family, or breaking up with a boyfriend or girlfriend), so it is important to inquire about these recent life events.

Teens may deny drug or alcohol abuse until it reaches a crisis. Many of them believe that unless it causes dysfunction, experimentation is harmless. However, be wary of information that contradicts facts because the life-style of a substance abuser often is based on cunning and deceit.

When interviewing the parent(s), ask whether the teen lies to cover up untoward events, whether money is missing in the house, and whether the teen has new friends who are much older or who appear to be inappropriate. One must weigh the information obtained from the adolescent against that provided by a parent. Parents may note that their child has an increased interest in the drug culture, that drug paraphernalia has been found in the home, or that the youngster recently has exhibited poor personal hygiene or sloppy grooming. Parents themselves may abuse drugs. After obtaining consent, information from schools, police, or

other agencies can be very helpful. The rule of thumb is: If suspicious, ask.

NEONATES

It is estimated that 11% of all pregnant women in the United States use illegal drugs, and that 10 million children in the United States are raised by addicted parents. To determine whether a newborn is withdrawing from a drug such as heroin, cocaine, or methadone, physical examination and laboratory evaluation probably will be more useful than history because many new parents will not admit voluntarily to drug abuse. However, to assess whether the neonate was born addicted, ask the mother about prenatal care, preterm delivery, and her use and the frequency of use of drugs and alcohol. Chemically dependent families can be identified by a number of fac-

Physical Examination

ADOLESCENTS

Physical signs of alcohol or substance abuse often are expressed by subtle features in the adolescent and usually are found only in the addicted teen. Generally, an addicted teen exhibits weight loss, cigarette stains, or burns or needle marks on his or her arms. Cocaine use may cause rhinitis and perforation of the nasal septum. Crack produces tachycardia, chest pain associated with a pneumothorax or coronary arterial spasm, and insomnia. Alcohol is usually the culprit in cases of acute gastritis or pancreatitis in previously healthy teens who develop acute mid- and upper-abdominal pain. Hypertension may signal amphetamine or cocaine use. Smoking marijuana can produce a dry cough, sore throat, and conjunctivitis. Follow your nose for

Pediatricians should screen routinely for symptoms of drug and alcohol abuse in adolescents.

tors, including criminal activity to support the habit, poor parenting skills, family violence, diversion of money and time to get drugs, increased incidence of mental and physical illnesses, and physical symptoms of drug abuse.

In general, when obtaining a drug abuse history—whether from an adolescent, a parent of an adolescent, or the parent of an addicted newborn—a genuine concern for the patient and the family must be conveyed. Barriers to pediatricians successfully obtaining a substance abuse history include denial or the “it's not in my practice” syndrome, the pediatricians' own biases (ie, teetotaler versus user), and believing “My training and experience have not prepared me for this.” Do not allow yourself to fall into any of these traps. You will be surprised at the answers to some of your questions if you simply take the initiative and pose the questions.

the smell of alcohol or marijuana on the patient; excessive perfume or aftershave may be used as camouflage. Intravenous use of heroin is associated with track marks, skin abscesses, cellulitis, superficial thrombophlebitis, and hepatitis. Any teen, including the pregnant teen, who shows signs of a sexually transmitted disease should be questioned further as outlined previously.

NEONATES

Detecting the influence of drugs of abuse on the neonate is much easier than distinguishing the adolescent who uses drugs from his or her normative peer. The newborn may exhibit signs of drug withdrawal as late as 2 wk after birth. Signs of the neonatal drug abstinence syndrome include the following, which can be remembered easily by the acronym **WITHDRAWAL**: **W**akefulness; **I**rritability; **T**remulousness, **T**achypnea, and **T**emperature instability; **H**yper-

activity, High pitched cry, or Hypertonia; Diarrhea and Diaphoresis; Rub marks, Respiratory distress, and Rhinorrhea; Apnea and Autonomic dysfunction; Weight loss or failure to gain Weight; Alkalosis; and Lacrimation.

Subacute withdrawal may last 4 to 6 mo and may feature tremulousness, impaired interaction, and developmental delay in addition to the previously mentioned signs. Stigmata of fetal alcohol syndrome, when present, include intrauterine growth retardation, craniofacial abnormalities, and heart defects. Drugs such as cocaine are notorious for causing infants to be born small for gestational age and have been associated with microcephaly and gastrointestinal and genitourinary problems.

Pediatricians should know the limitations and uses of urine toxicology testing.

Laboratory Testing

Despite improved methodologies that allow for the easy detection of drugs of abuse within body fluids (urine in particular), controversy persists regarding the use of such techniques within pediatric practice. The controversy focuses on differences regarding whose consent is necessary for drug screening and the appropriate response to a positive test. Under usual circumstances, parental consent is required before any testing can be done on a newborn. In contrast, parental consent alone is usually not sufficient to test an older, competent adolescent. However, a mother might object to testing of her baby when such testing will provide potentially damaging information about her personal behavior. Similarly, the adolescent who would opt to deny drug abuse is unlikely to be willing to consent to testing that would be self-incriminating. In addition, opinions vary as to whether the detection of drug metabolites in a newborn should be cause for the automatic involvement of child protective services, and

who should be privy to test results in an adolescent.

Each pediatrician should establish personal criteria for seeking laboratory confirmation of a clinical impression of drug abuse. Examples of such situations involving adolescents include the medically or psychologically compromised teen suspected of drug abuse, the teenage patient in the emergency department suffering from acute injuries that may be secondary to drug abuse, and urine drug testing to monitor abstinence in an adolescent patient undergoing drug rehabilitation. Examples of less clear-cut indications are the mandatory testing of all teen athletes or youth in the process of assignment into the criminal justice system.

Reliable test results can be assured only if urine is collected under observation to prevent tampering. Urine drug tests can identify opiates, cocaine and its derivatives, barbiturates, diazepam, methadone, and amphetamines. Alcohol ordinarily is not detected by routine urine screening, but determinations of the alcohol level in the blood and "breathalyzer" testing are accurate and widely utilized techniques for determining recent use.

In the newborn nursery, a urine sample from any baby who exhibits signs of drug withdrawal should be examined for drugs of abuse. Beyond identifying the reason for the neonate's medical problem, a positive result from a urine test signals maternal drug abuse, which is a symptom of a troubled family that may put the newborn at risk for neglect and abuse. It is estimated that 50% of all child abuse and neglect cases in New York City involve drug abuse.

Prevention

If, after interviewing the patient and

family, you believe that the teen is not using drugs, be supportive of this abstinent behavior and let the patient know that he or she can come to you with any questions related to substance use in the future. This helps establish a trusting, open relationship between you and the adolescent and acknowledges the fact that you care, both as an adult and a physician. It also shows you are open-minded and are willing to give factual information related to drug abuse. Utilize this opportunity to reinforce your concerns about the consequences of driving with an intoxicated friend.

For parents of school-aged children and parents of nondrug-using adolescents, it is important to reinforce the building of the child's or adolescent's self-esteem and the importance of maintaining open lines of communication within the family. For younger children, parents can help lower the risk of the child developing a substance abuse problem by teaching the child to defer gratification, separate needs from wants, and understand the logical consequences of one's actions. Information about drugs is essential and best offered by families and health providers and through the school health curriculum. All are important venues and collectively form the basis for a complete prevention program.

On a more global scale, as a member of the community, the pediatrician may be called upon to give talks and presentations regarding substance abuse to school, community, or religious groups. It is important to provide clear and accurate information about the problem. Pediatricians also may play a proactive role by becoming vocal community activists against alcohol advertisements and local establishments that sell or serve alcohol to underage youth, or as an advisor to a local chapter of SADD (Students Against Drunk Driving).

Treatment

ADOLESCENTS

If an adolescent identifies himself or herself as a drug user, the pediatrician must determine the extent to which he is or she is using drugs. If the adolescent is experimenting with alcohol or marijuana in a social setting, and the drug use is not interfer-

ing with life-style, school performance, or personal maturation, then it is important for the pediatrician to warn the adolescent of the consequences of drug abuse. It is also imperative to convey to the teen who believes that he or she is "merely experimenting with drugs" that such behavior may place him or her in certain risky situations regarding sex, violence, or driving while intoxicated. Help this teen modify his or her behavior by addressing issues such as abstaining from drinking and driving or using a designated driver. With the younger adolescent, rather than condemning outright the experimental use of drugs and alcohol, talk about postponing use until the young teen can understand better how drugs can affect his or her body and put him or her into potentially life-threatening situations. However, be aware that condemnation works for some teens, postponement for others.

If substance abuse is interfering with the adolescent's school work or family or peer relations, or if the teen shows signs of physical or psychological dependence, then it is time to offer specific treatment for the drug abuse problem. Such treatment may be offered by the primary care provider, in an ambulatory drug treatment program, or in an inpatient or residential drug treatment setting. Those circumstances where the adolescent's drug use has become problematic but has not reached the point where separation from the family and residential care are indicated are worthy of a trial of ambulatory treatment. Whether that treatment is offered by the pediatrician or by referral to a specific drug treatment program will depend upon not only the severity of the problem but also upon the behavioral skills, familiarity with substance abuse issues, and orientation of the pediatrician. Certain circumstances would dictate that ambulatory care by the primary care provider is not a preferred option. These circumstances include cases in which the adolescent has a serious psychiatric illness, the teen requires medical supervision for a withdrawal syndrome, the family environment is disruptive or dangerous, or outpatient therapy has been unsuccessful for the adolescent in the past.

In considering treatment options, it

is often helpful to seek consultation from another health professional with specific drug abuse expertise. While the availability of such experts within the community is variable, given the pervasiveness of substance abuse in this country, such consultation is accessible in the majority of localities. When possible, it is best to seek consultation from an individual who does not have a commitment toward one specific form of therapy to minimize the possibility that dispositional decisions will be made on the basis of a preexisting bias rather than individualized to the needs of the particular adolescent. Identification of such consultative expertise within the community is a requisite of current practice, not dissimilar to the need to identify qualified pediatric and surgical subspecialists.

In those circumstances where the pediatrician feels comfortable being the primary source of treatment,

deterioration of the patient's emotional and physical condition to a level that threatens his or her life, and loss of control and exhibition of abusive or dangerous behavior to family members or friends.

For these situations, inpatient care has come to be identified as residential treatment. Although no exact criteria can be offered for choosing among available inpatient drug treatment programs, guidelines advanced by the Provisional Committee on Substance Abuse of the American Academy of Pediatrics are helpful in assessing particular treatment facilities. These guidelines include that the drug treatment program should view drug and alcohol use as a primary disease and have a strict abstinence policy as the core of treatment within a drug-free environment. In addition, the goal of therapy should be to reconstruct and integrate progressively all areas of family, school, peer, and

Pediatricians should appreciate the various modes of outpatient and inpatient drug abuse treatment.

some experts suggest drawing up a contract between the physician, the adolescent, and the family that sets limits on drug use and goals for stopping abuse. Periodic monitoring of compliance with abstinence goals through urine testing for drug metabolites may be both a help in assessing progress and an aid to the adolescent in supporting drug-free behavior. The adolescent also may require therapy from a social worker or peer counselor, and family therapy must be considered. Peer support from groups such as Alcoholics Anonymous also may be helpful.

If the adolescent cannot discontinue using drugs or alcohol even after appropriate ambulatory interventions, and in those instances where drug abuse is compounded by psychiatric comorbidity, physiologic addiction, or family disruption, inpatient therapy is mandated. Other factors precluding a continued trial of ambulatory care include the emergence of runaway behavior or suicidal idea-

leisure activities for the teen and to reunite the family. Treatment programs should include teaching risk-reducing behavior.

There are two types of residential treatment programs, both of which provide highly structured drug-free environments. One is hospital-based and usually features an adolescent drug treatment unit separated from the adult unit and a low patient-to-staff ratio. This management approach is usually costly but may be necessary if the teen requires medically supervised drug withdrawal, has acute psychiatric symptoms, or is actively suicidal. It is important for the hospital to be near the adolescent's home, so close family contact may be maintained. Besides providing counseling and medical treatment in a drug-free environment, there also should be opportunities for educational and vocational rehabilitation.

The second type of residential treatment program is a therapeutic community in a nonmedical setting,

usually run by former drug users. These programs also encompass a drug-free environment and include group, individual, and family therapy. The teen obtains progressive privileges based on certain pre-established goals. The adolescent entering a therapeutic community should not require close medical supervision in order that drug withdrawal poses no untoward risk. The substance-abusing teen has impaired social and family functioning, so separation from the usual home-school-friend-neighborhood environment is necessary.

In any type of drug treatment program, close follow-up and continued therapy are essential. The treatment must include a stepwise program with long-term, posttreatment planning. There is a lifetime potential for relapse among substance abusers.

NEONATES

If it is determined that a neonate is born addicted or that a child is a member of a drug-abusing family, it is imperative that the parent be referred to the proper social service agencies, based on the extent of drug abuse and family dysfunction. If the newborn is exhibiting signs of withdrawal, the initial treatment is supportive. The infant should be swaddled to decrease sensory stimulation. Watch for weight loss, temperature instability, dehydration, or seizures. If these occur, treatment with a sedative such as phenobarbital may be necessary in an inpatient setting. Affected infants should be monitored closely for neurobehavioral problems in the future as well as human immunodeficiency virus status if the mother is an intravenous drug user.

From a psychosocial standpoint, drug-abusing parents need to be enrolled in parenting skills courses after determining, in conjunction with social services, that it is safe for the neonate to be allowed to go home. These families require frequent medi-

cal and social services follow-up to ensure that parents are not using drugs or alcohol and that the family unit has not reverted back to the drug-seeking life-style.

Summary

Abuse of drugs and alcohol is pervasive in our society. The role of the pediatrician as a health-care provider from birth through young adulthood includes recognizing the stigmata in newborns of prenatally ingested drugs as well as being able to treat neonatal drug withdrawal syndromes. Questioning about drug use and other closely related topics should be incorporated into all health-care maintenance visits, starting at the age of 10 y, with parental participation and anticipatory guidance being offered. Physical examination and laboratory testing are not as helpful in confirming an impression of substance abuse as a comprehensive interview and a full appreciation of the warning signs of substance abuse.

Treatment of the problematic user with a multidisciplinary team that understands adolescent development and behavior as well as the problem of substance abuse is crucial. The decision to treat the teen in an ambulatory or inpatient setting is determined by the extent of abuse, underlying medical problems and psychopathology, and the degree of family dysfunction.

The pediatrician must not avoid addressing these issues with patients. If, however, upon identifying an adolescent or a newborn with a drug problem, the pediatrician feels uncomfortable or ill-prepared to manage the patient, appropriate professional referrals are warranted. Despite exercising the referral option for treatment, as advocate for child and family, the pediatrician remains professionally bound to track all drug abuse-related referrals while continuing to participate in the general ongoing care of the patient and family. Finally, the pediatrician should retain

a public advocacy role in the community by offering educational, preventive, and supportive efforts in the continuing struggle against drug abuse.

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