

## Chapter 11

# Intermittent Explosive Disorder and Impulsive Aggression in Patients With Substance Use Disorders

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## INTRODUCTION

A moment's reflection on clinical experience will convince one that substance abuse and aggression commonly coexist. Fights often occur during substance intoxication (alcohol, sedatives, cocaine, stimulants, and phencyclidine (PCP)) and/or withdrawal (alcohol, sedatives, opioids, cannabis, and nicotine). Functional impairment

from arguments and abusive relationships is often observed in the histories of patients seeking treatment for substance dependence. Impulsivity, hyperactivity, inattention, and aggression are components of a childhood temperament that predicts the development and persistence of substance abuse in adolescence and young adulthood (Ialongo, Edelsohn, Werthamer-Larsson, Crockett & Kellam, 1996; Tarter et al., 2003).

Aggressive behavior is frightening, disturbing, and difficult for clinicians to manage. Recidivism is high in patients with histories of serious violence, thereby forcing clinicians to take seriously threats to significant others and to the general public. Sometimes clinicians have a legal obligation to warn others. The treatment team itself may feel physically threatened either immediately or as a consequence of a duty to warn others. The various causes of aggression and their corresponding treatment or management strategies are highly relevant to clinicians working with substance-dependent patients.

Just as a rational approach to suicidal behavior is part of standard clinical practice (see Chapter 17 of this volume), a rational approach to violent behavior is also possible. Given the disturbing, disruptive nature of aggression, the default response to violence in substance abuse treatment clinics is usually administrative: expel the offender. The physical safety of clinical staff is paramount, but, once established, the clinician may collect a thorough clinical history that may permit an understanding of the source of the violent tendencies and suggest possible treatments that may allow the patient to avoid expulsion and remain in treatment. This chapter aims to provide clinicians working with substance-dependent patients with a framework for distinguishing different types of aggression and for planning treatment based on available evidence.

The terminology of aggression is not standardized, even though aggression is a common problem in substance abuse treatment programs. Clinically, a cold hard stare from an individual with a violent history and a grudge against the clinic feels very different from the ranting of a hot head making all kinds of threats. We feel chilled in the first instance and emotionally upset in the second. This is how we are supposed to feel. We have been programmed to feel that way by evolution. In one case we are the object of predatory (cold) aggression, and in the other case we are the object of affective (hot) aggression.

Until recently, psychiatry has been reluctant to study aggression as a separate area of psychopathology. There are anxiety and mood disorders, but no aggressive disorders, in the various editions of the *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition (*DSM-III*; American Psychiatric Association, 1980); *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edition, revised (*DSM-III-R*; American Psychiatric Association, 1987); *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (*DSM-IV*; American Psychiatric Association, 1994); *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition, text revision (*DSM-IV-TR*; American Psychiatric Association, 2000). As late as 1994, the *DSM-IV* Taskforce questioned whether there should be any disorder that dealt just with aggression, let alone an attempt to subclassify the problem. The *DSM-IV* Taskforce planned to eliminate intermittent explosive disorder (IED) from the *DSM-IV* because there was little evidence that uncharacteristic eruptions of violence were a clinical problem.

However, the *DSM-IV* Taskforce noted a paradox. Clinicians were using IED to characterize eruptions of violence that could not be explained by another *DSM* diagnosis. The *DSM-IV* Taskforce members reasoned that clinicians may be identifying

a neglected area of research and modified the IED criteria to include interepisode dispositions toward aggression (Bradford, Geller, Lesieur, Rosenthal, & Wise, 1996). It then became "legitimate" to study characteristic outbursts of aggression not explained by conduct disorder, psychosis, or affective disorders.

While this new definition of IED promoted some academic research and indicated that it was a common problem in patients seeking psychiatric care (Coccaro, Posternak, & Zimmerman, 2005), many questions remained (Coccaro, 2002; Coccaro & Siever, 2002). Child psychiatry has led the way in classifying aggression as predatory (cold) versus affective or "impulsive" (hot) types (Conner, 2002; Soller, Karnik, & Steiner, 2006). This is a useful starting point for understanding aggression, as the following clinical vignettes will illustrate. The environmental contributions to aggression (family discord, high crime neighborhoods, availability of substance abuse and weapons) are well known in the epidemiologic literature (Earls & Mezzacappa, 2002) and have been ignored in these case presentations for the sake of clinical simplicity.

## CASE PRESENTATIONS

All these cases are males because overt aggression is far more common in males. Overt aggression in females is essentially the same, although the proportion of types of aggression may be different.

### Case 1

JM was 10 years old when he was arrested for breaking a younger boy's leg and stealing his money. He was unafraid of the family court judge and stared at her, not so much in defiance, but as though he was memorizing her face. At reform school, he was often accused of violence but was rarely caught and always got even. After he was released, at age 18, he stole and dealt drugs, and he always got even. After he was arrested, he was given a choice of jail or drug treatment, and while staring at his probation officer, he chose treatment. After arriving at the center, he kept his criminal activities quiet, but he arrived at his sessions with his cold, hard stare. He had several positive urines and would have to go to prison if he did not turn in clean urines. His counselor was afraid of his reputation for always getting even.

This is a case of cold aggression. It leads directly to antisocial behavior. It is planned and premeditated, and the individual has the sense of "being quietly targeted." There is no known treatment for cold, predatory aggression. Medication does not help, and no psychotherapy claims success. This is a case in which a purely administrative approach is justified.

The cases that follow are all examples of different types of hot aggression. Here psychiatric understanding has a great deal to contribute.

### Case 2

AP has been in special education since the second grade. Now 10 years old, he has recently been referred for a psychiatric evaluation because he threw a chair at a teacher that left a hole in the wall. AP was notorious for these eruptions of anger and had been suspended five times in the past six months, with the last three being "superintendent suspensions," indicating that someone could have been seriously hurt. He had few

friends, although he received a lot of attention from his fellow classmates. They both feared him and goaded him to explode. The classroom was chaotic, with few children present every day.

AP felt fear and remorse after each explosive episode, but he had little apparent understanding of what had led up to it. He was not the only violent child in the classroom. Children who were not violent tended to be victimized. Within this deviant subculture, AP was not outside the norm until he threw the chair at the teacher and could have seriously hurt him.

This vignette illustrates the complex presentation of hot or affective aggression in school. AP always had a tendency to explode with aggression. It anteceded his placement in special education. Once he was in the special education class, his unpredictable rage became "adaptive" in that new environment. The other children were afraid of him. The worst aggression was directed to the more vulnerable members of the group. Throwing the chair at the teacher represents both a biological vulnerability toward explosive temper and, most likely, a maladaptive form of learning, encouraged by his peers.

The patient's mother recognized his tendency to throw tantrums, and she was afraid of him. His temper reminded her of his biological father, long gone from her life but still an intimidating memory. The patient's mother sought help with his temper and learned some techniques for managing his temper, but she could not withstand the explosive rage that often followed her attempt to place limits.

It is only a matter of time before the patient's family will lose control over him entirely, and his peer group will assume total control over reinforcers of his behavior. Lack of supervision, combined with intermittent rage, makes his membership in a deviant substance abusing subculture very likely. Unless his rage is brought under control, it will be difficult for any system, including reform school, to alter his trajectory.

Note that both JM ("Case 1") and AP are on an antisocial trajectory, but in the case of JM, his cold aggression led directly to antisocial behavior. In the case of AP, complex maladaptive coercive reciprocal social interactions led to antisocial behavior, and the outcome is still not settled; his rage is impulsive, out of his control, and disturbing to him; but he gradually learned that it is adaptive in certain social situations. His rage enables him to coerce others to act as he wishes, while others may respond by coercing him. There are opportunities to intervene, in order to reduce the intensity of the anger and to teach him more prosocial ways of interacting with others.

### Case 3

ML was 14 years old and rarely went to school. When he did, he usually started a fight and, half the time, was beaten up himself. A recent sweep of the school had rid it of gang elements, and any use of gang logos in school was strictly forbidden. However, ML was largely rejected by gang members, and he could find no protection. He found, however, that if he smoked large amounts of marijuana, he could remain calm for at least part of the day and maintain something of a social life. Not having the backing of a gang, he turned to an inchoate group of youngsters who arrived at the school early and were stoned by first period, often cutting classes after the third period. Despite his regular use of marijuana, he continued to have explosive episodes. When interviewed,

he vigorously defended his use of marijuana as necessary for staying out of fights to the extent that he could.

In contrast to AP ("Case 2"), ML has some insight into his temper, enough insight to seek to control it with marijuana. However, marijuana does at best a mediocre job of controlling his behavior and gets him more deeply involved in a deviant subculture, where exposure to other substances of abuse is inevitable, thereby raising the risk for cannabis dependence and long-term heavy use of cannabis. At this point, ML has learned that it is not so easy to coerce people with rage attacks, although he will do it with his mother and weaker adolescents. A host of related problems begins to emerge at this time: school failure, arrest for petty crime, family discord. These problem behaviors are so characteristic of adolescent substance abuse that some argue that adolescent substance abuse is simply one aspect of a larger concept of problem behaviors. In the case of ML, it seems clear that his aggression plays an important role in initiating and maintaining these problem behaviors, thereby raising the question of whether early intervention could reverse or prevent this psychosocial deterioration.

## Case 4

MB has been called a hot head all his life. At age 24, he remains a follower and has followed his friends into heroin use and methadone maintenance. He smokes marijuana to help him calm down, but one would never know it from the way he blows in and blows out of the clinic each morning. His aggressive outbursts do not feel personal, but the slightest frustration leads to what can only be called a temper tantrum. Whereas the other patients engage in intense indignant interchanges with each other in the parking lot, MB does this in the middle of the line to pick up his methadone. MB still challenges authority directly. He knows if he is expelled from the methadone program, his parole officer will send him back to prison, but he cannot help himself. Shouting, threatening, abusive words, and stomping around were once so adaptive. Now he knows that if he throws a chair or damages property in front of the staff, he will be expelled and left to his own resources.

The patient's behavior is a product of three factors: his biological predisposition to explode in hostile rages, his drug use (self-medication with illegal substances), and negative feedback (including punishment) that he has received from society. It is very difficult for MB to abandon his use of coercive interaction patterns with others, including authority figures, because they were adaptive in the past and are resistant to change. Unless his explosive aggression is treated, it is only a matter of time before he is expelled from treatment.

## Case 5

EW was 24 years old when he was released from the hospital following his second suicide attempt in three years. A skinny young man with tattoos covering both arms, he seemed unaware of the first impression his tank top and tattoos made in the clinic. He spoke in casual but educated speech, as though at some time in the past he had ambitions to go to college. He hated his family and he hated himself. He drew people to him but could not hold on to friendships. When he felt betrayed, he would hurt himself, other people, or both. His girlfriend had an order of protection against him, and when he showed up at her house screaming abuse, she called the police. By the time that the

police had arrived, he had destroyed her television set, and as the police carried him away, he ranted and raved. After his release from jail, he took cocaine and cut his throat in front of his girlfriend's brother.

This case highlights the need to pay attention to symptoms of depression in individuals who present with aggressive features. The mixture of self-hatred and self-abuse suggests that a different type of mood disturbance is driving the aggression than that in the previous cases. It is important to explore whether aggression is accompanied by depressive symptoms (see Chapter 1 and Chapter 2 of this volume), as its presence may affect treatment decisions. In the first three cases, the aggression was driven by irritable mood, but the irritability was always directed outward, never at the self. A mood stabilizer, such as lithium or divalproex (Depakote), is often helpful in reducing this kind of outward-directed irritability and aggression. For patients with inner-directed irritability and depression, a serotonin reuptake inhibitor (SRI) or other antidepressant often needs to be part of the treatment.

Thus far, hot aggression driven by mood disturbances has been discussed. There are two more types of aggression that can be considered hot or affective. These are aggression driven by pure impulsivity, such as that seen in attention deficit hyperactivity disorder (ADHD) (see Chapter 5 of this volume), and aggression driven by paranoid states (see Chapter 7 of this volume). The case of EW ("Case 5") has elements of paranoia in his preoccupation with betrayal and jealousy, but the mood component is dominant. The case of ML ("Case 3") has elements of attention deficit hyperactivity disorder (ADHD), evident in his long-standing tendency to act on his impulses even when he was not in a bad mood. However, pure states of impulsive aggression (ADHD-type) and paranoid aggression do exist.

## Case 6

RT was diagnosed with ADHD as a child. Now 22, he never finished high school due to learning problems that were never addressed. He often started fights in school, but he did not think of himself as a troublemaker. He thought he was just playing. He repeatedly found himself in fights after being warned by an adversary "I'm not playing with you." He did not hold grudges or plan revenge. He could make friends but he could not keep them. He would always hit first and think later. When he thought about his aggression, he was often sorry, but the outbursts and fights kept happening. Now in treatment for cocaine abuse, he still blurts things out and is constantly on the verge of confrontation. His aggression is driven by impulsivity related to ADHD. Stimulant medication may both improve his ADHD symptoms and control his aggression, and one wonders whether his life course might have been quite different had his ADHD been identified and appropriately treated at an early age.

## Case 7

In contrast to RT ("Case 6"), BG held grudges. If he was slighted or felt slighted, he would get even. From his perspective, he was not out looking for trouble. He just wanted to "even the score." When he saw his opponent, an intense feeling of humiliation came over him. It was unbearable. If someone laughed at his rage, that person entered the list of persons who he would attack. BG was paranoid. He misinterpreted the intentions of others, imagined that people saw his humiliation as the most important issue, and acted accordingly. BG could benefit from a low-dose antipsychotic medication.

## DSM-IV CRITERIA

The above case presentations suggest a clinically useful theory of aggression must distinguish aggression that is cold ("predatory") and required planning from aggression that is hot ("affective"). Hot aggression can be impulsive, paranoid, inner-directed irritable, or outer-directed irritable in origin. Hot aggression can be called "affective aggression," following the convention in affective neuroscience. IED defines a clinical situation in which affective (hot) aggression appears with no reasonable purpose. There is no threat to ward off and no reason to explode with rage. The *DSM-IV* diagnostic criteria for IED are presented in Table 11-1.

The criteria operationalize the loss of "top-down" "executive" control over affective (hot) aggression. The hot character of the aggression is revealed in the use of the word "impulses"; the loss of top-down control is revealed in the words "failure to resist"; and the dysfunctional nature of the aggression is revealed in the words "out of proportion." Criterion C requires that the episodes not be the direct consequence of substance use or a medical condition.

## NATURAL HISTORY AND ETIOLOGY

The etiology and natural history of hot or affective aggression are not well known, since the concepts are only starting to emerge. Among studies that have simply applied IED criteria, two are exemplary. One looked at how many people met criteria in one year in the United States and estimated about 2 percent of those surveyed did (Kessler, Chiu, Demler, Merikangas, & Walters, 2005). Another looked at a clinical sample and estimated the lifetime prevalence of IED in that group to be 6 percent (Coccaro et al., 2005). It would appear that nonpredatory, or affective or hot aggression is a mild to moderate public health problem in terms of prevalence and a moderate clinical problem in adults. In children, hot aggression is a much more serious problem, accounting for, along with ADHD and disruptive behavior disorders, about half of all clinic visits (Earls & Mezzacappa, 2002).

The natural history of IED (as pieced together from adults who report having the problem in a clinical setting) suggests it often begins in childhood, is well-established by young adulthood, and fades as the individual ages (Coccaro et al., 2005). Follow-up studies of children with antisocial behaviors are abundant and suggest a chronic course of problems into adulthood (Earls & Mezzacappa, 2002), but studies focusing on tantrums in childhood are almost nonexistent, with the one available study suggesting persistence of problems with authority and temper into adulthood for the group as a whole (Caspi, Elder, & Bem, 1987), but the amount of variability in outcome is greater (i.e., some individuals age out). If aggression is combined with antisocial spectrum problems, then the long-term connection with substance abuse (Boyle et al., 1992) is clear-cut (Robins, 1966), but for tantrums alone, the outcome is largely unknown.

The etiology of pathologic affective aggression is also unknown. Most speculation in this area acknowledges the role of social learning and attributes the biological role to a failure of "self-regulation." Self-regulation is a generic term that refers to the ways people filter and respond to the innumerable influences that impinge on them. There is evidence that specific neural pathways subserve self-regulation and that when these are disrupted, neurobehavioral disinhibition results. The latter refers to a failure of top-down control or executive functioning. This failure is connected not only to affective aggression but also to substance abuse (Tarter et al.,

**Table 11-1**  
**DSM-IV Criteria for Intermittent Explosive Disorder**

Symptoms	DSM-IV Criteria <sup>(a, b)</sup>	SCID-ICD Questions to Aid Diagnosis <sup>(c, d)</sup>
<b>Core Symptoms</b>	A. Several discrete episodes of failure to resist aggressive impulses that result in serious assaultive acts or destruction of property.	Have you ever lost control of your anger, resulting in your hitting or seriously threatening someone or damaging things? If yes, what did you do? When did you do it? How often did it happen?
<b>Other Criteria</b>	B. The degree of aggressiveness expressed during the episodes is grossly out of proportion to any precipitating psychosocial stressors.	What happened that set you off? Do you think your reaction was much stronger than it should have been given the circumstances? Has anyone told you that your reaction was way off-base given the situation?
	C. The aggressive episodes are not better accounted for by another mental disorder (e.g., antisocial personality disorder, borderline personality disorder, a psychotic disorder, a manic episode, conduct disorder, or ADHD) and are not due to direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., head trauma, Alzheimer's disease).	Did this happen only when you were drinking or using drugs? Did this happen only when you were sick with a medical illness?  IF HISTORY OF MANIA OR PSYCHOSIS: Did this happen only when you were feeling excited or irritable or only when you had [psychotic symptoms]? Did you do [assaultive acts] because you were hearing voices or because your thinking was confused? Did you do [assaultive acts] on purpose or was it really beyond your control?

<sup>(a)</sup> American Psychiatric Association (1994).

<sup>(b)</sup> Reprinted with permission from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (Copyright 1994). American Psychiatric Association.

<sup>(c)</sup> First (2004); to date SCID-ICD has not been field-tested.

<sup>(d)</sup> Reprinted with permission from the Structured Clinical Interview for DSM-IV-TR Impulse Control Disorders Not Elsewhere Classified (2004).

2003). In adults, drug/alcohol use is more prevalent among patients diagnosed with *DSM-IV* IED than controls (Coccaro et al., 2005). More significantly, the presence of neurobehavioral disinhibition at age 11 predicts substance abuse at age 15 (Tarter et al., 2003) and beyond (Tarter et al., 2003).

As can be seen in the clinical vignettes (see "Case Presentations"), hot or affective aggression is almost certainly not one clinical entity. It is very likely that there are different types of hot aggression. The clearest evidence for this point is the fact that radically different pharmacological agents (stimulants, antipsychotics, antidepressants, and

mood stabilizers) are sometimes useful and sometimes not. Since these agents are very different in character, (i.e., in what they do in the brain), it is likely that there are multiple clinical entities or disease processes underlying affective aggression. Different types of hot aggression seen in clinical practice are illustrated to in the vignettes (see "Case Presentations") and discussed below.

## ISSUES INVOLVED IN MAKING A DIAGNOSIS IN SUBSTANCE-DEPENDENT PATIENTS

Since individuals who become substance dependent often have preexisting problems with self-regulation (Tarter et al., 2003), it is possible that some adolescent and young adults may attempt to self-medicate hot or affective aggression with substances of abuse. We have found that under double-blind placebo-controlled conditions, treatment with divalproex of irritable, aggressive patients who use marijuana to calm down both improves irritability and aggression (often dramatically) and reduces their marijuana use (Donovan, Stewart, & Nunes, 2004). A pattern of chronic marijuana use in a patient with aggressive episodes should raise the suspicion that some form of self-medication is taking place, and should prompt further investigation into the nature of the aggressive symptoms.

Individuals seek out substances of abuse for pleasure, or for positive reinforcement in behavioral terms. When a patient uses drugs for pleasure, secondary effects on control of aggression may ensue. Alcohol, cocaine (Chermack & Blow, 2002), and PCP (McCardle & Fishbein, 1989) promote expression of aggression during intoxication, especially in individuals who are predisposed to aggressive outbursts (Giancola, Godlaski, & Parrott, 2005). Irritability can occur during withdrawal from alcohol or other sedatives, opioids, cannabis, and nicotine and, if sufficiently severe, can result in aggression. Thus, a clinical picture can emerge in some substance abusers of chronic explosive episodes surrounded by periods of intoxication and/or withdrawal. Whether an aggressive disposition is permanently worsened by exposure to drugs of abuse is not known.

The key to distinguishing IED from the consequences of chronic intoxication and withdrawal is the presence of symptoms prior to the onset of substance use or during periods of extended abstinence. Thus, a developmental history, focusing on childhood and adolescent behavior problems, school suspensions, school yard fights, recommendations for medication, and other indications of neurobehavioral disinhibition in childhood or early adolescences should be gathered. When aggressiveness and substance use are difficult to separate in the history because both are chronic, attention should be paid to the pattern of irritability and aggression and whether its timing corresponds closely and consistently with periods of intoxication or withdrawal from substances that characteristically boost irritability.

## INSTRUMENTS AND METHODS FOR SCREENING AND DIAGNOSIS

There are several ways to assess aggression, including structured clinical interview (e.g., Structured Clinical Interview for DSM-IV-TR Impulse Control Disorders Not Elsewhere Classified (SCID-ICD; First, 2004), and scales (e.g., Overt Aggression

Scale (OAS; Endicott, Tracy, Burt, Olson, & Coccaro, 2002)). The SCID-ICD, a recently developed module for the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I; First, Spitzer, Gibbon, & Williams, 2002), quotes *DSM-IV-TR* criteria for impulse control disorders and suggests questions to elicit information from patients about their symptoms. To date, the SCID-ICD has not been field tested. Table 11-1 includes questions from the SCID-ICD for each of the diagnostic criterion for IED. Scores on assessment instruments, like the OAS, should reflect both the frequency and the magnitude of aggression. For example, a single episode of physical aggression should contribute more to the final score than a single episode of verbal aggression, but multiple verbal rages should add up in clinical significance to a single fight. Various forms of the OAS are available (Endicott et al., 2002).

The idea behind the OAS is to use specific anchors with four types of aggression: against other people, against the self, against property, and purely verbal aggression. Each type of aggression is “weighted” differently in arriving at a total score from purely verbal aggression, considered least severe and given a weight of 1, to aggression against people, considered most severe and given a weight of 4. Aggression against property gets a weight of 2, and aggression against self gets a weight of 3. The usual frame of reference is the past week. To arrive at a total score, each incident in each of those domains that has occurred over the past week is multiplied by the weight, and then all the weighted episodes are summed. Thus, one physical fight in the past week would yield a score of 4; two fights would yield a score of 8, and so forth. Each severe outburst of verbal rage would add one point. Each episode of destruction of property would add two points. Each episode of harm to self (e.g., hitting one’s head, pounding one’s fist against a wall) would add three points. The points are then summed to arrive at a measure of how severe the person’s aggression has been over the past week. For example, a patient with one fight over the past week (1 episode times the weight of 4 = 4) plus three verbal outbursts over the past week (3 episodes times the weight of 1 = 3) and no episodes of destruction of property or harm to self would get a total score of 4 + 3 = 7 for the past week. This scale is useful in establishing a baseline for the type and frequency of aggressive episodes and for following progress during treatment.

## DIFFERENTIAL DIAGNOSIS AND OVERLAPPING DISORDERS

The first and most important differential to make is whether the aggression is cold (predatory) or hot (nonpredatory), as this will govern whether treatment is possible. Predatory aggression is characterized by pleasure—a thrill, often likened to the thrill of the hunt. There is little emotional excitement, even with probing by a clinician, on recounting the violence, as the emotion of anger or rage was not present during the act. If this is the pattern to the violence, and the violence is serious, then little can be done to alter the course of the disorder in an outpatient therapeutic setting.

Inappropriate outbursts of affective or hot aggression may be accounted for by a variety of states in which top-down control is compromised or the state of aggressive arousal is increased (see Table 11-2). Thus, intoxications with some substances, such as alcohol, promote aggression in those predisposed by compromising inhibition of aggressive impulses. Intoxication with PCP appears to promote aggression by increasing aggressive arousal. Other substances are less likely to promote hot aggression, for example, marijuana and heroin are more calming and sedating, although withdrawal from these substances can increase aggressive arousal. Thus, the second question in a substance abuse treatment setting when confronting aggression is whether the individual is under the influence.

**Table 11-2**
**Common Psychiatric, Medical, and Substance-Related Conditions Associated With Irritability and Aggression (Affective Aggression)**

<b>Diagnosis</b>	<b>Difference From Intermittent Explosive Disorder</b>
schizophrenia (see Chapter 7 of this volume)	Presence of delusions, hallucinations, blunting of affect; aggression is usually a response to paranoid delusions (e.g., a patient feeling convinced he must defend himself because others intend to harm him) or to command hallucinations (the patient hears voices commanding him to harm others).
bipolar disorder (see Chapter 2 of this volume)	Presence of cycling into and out of depressive and manic states; the mood disturbance in either depression or mania can be irritability; in severe mania, patients often become psychotic and may have delusions or hallucinations that prompt aggression.
major depression, dysthymia (see Chapter 1 of this volume)	Presence of depressive episodes or chronic depression; depressed mood may be irritable; look for suicidal thoughts and plans (aggression toward self); severe major depression may evolve into psychosis.
ADHD (see Chapter 5 of this volume)	Constellation of symptoms including hyperactivity, difficulty with attention, memory, and organization dating to childhood; irritability and aggression typically occur impulsively when such patients are kept waiting (e.g., waiting in line or in traffic) or otherwise frustrated.
borderline personality disorder (see Chapter 9 of this volume)	Lifelong pattern of mood swings, stormy, unstable interpersonal relationships, sense of abandonment, and poor sense of self and identity; irritability is typically focused on significant others or treatment staff and is related to feelings that they have been abandoned or their needs have not been met.
head injury	Clear onset of symptoms after a discrete point in time, history of head injury; as with intoxications, aggression is impulsive in nature and reflects brain dysfunction as a result of the head injury.
metabolic conditions, including delirium, dementia, and intoxications (see Chapter 6 and Chapter 14 of this volume)	Presence of global impairment in cognitive functioning as evidenced in the mental status exam (e.g., disorientation, confusion, gross memory impairment), presence of a relevant medical condition, or history of recent substance ingestion.  – Substances associated with irritability or aggression during intoxication: alcohol, sedatives, cocaine, other stimulants, PCP.  – Substances associated with irritability or aggression during withdrawal: alcohol or sedatives, opioids, and cannabis.

Certain medical conditions can promote aggression through the same mechanism. Head injury, particularly to the frontal lobe, can compromise top-down control. Certain forms of epilepsy are implicated in aggressive outbursts. The original description of IED as uncharacteristic episodes of violence was founded on the idea that some individuals had an unusual form of epilepsy. This idea has fallen by the wayside, but it has never been refuted.

Aggression is may also be caused by a psychiatric disorder, such as schizophrenia, mania, and attention deficit spectrum disorders. By definition, such individuals do not have IED because the aggression is presumably better explained by another psychiatric diagnosis.

As mentioned earlier, part of the reluctance to view aggression as a distinct psychiatric problem stemmed from its co-occurrence with many psychiatric conditions. Thus, affective aggression can (but need not) occur in any condition that disturbs self-regulation. Schizophrenia disrupts normal cognitions, thereby allowing the person to think that affective aggression is appropriate when it is not. Bipolar disorder disrupts affect regulation, which can create a mood in which everything appears to annoy and frustrate the patient and to interfere with grandiose plans, thereby making it appear appropriate to use affective aggression to make people back off, when, in fact, people are needed to constrain the person. ADHD leads to loss of top-down control. Thus, a person with ADHD, by definition, may have already yelled at or hit someone because the aggressive impulse was, like all other impulses, not constrained. Some forms of depression bring forth irritable mood in which the person not only attacks himself/herself but also attacks others. The predominant mood disturbance of depression can be irritability.

The main difference between these disorders and problems with affective aggression alone is the presence of the associated symptoms of delusions and hallucinations (schizophrenia), decreased need for sleep, flight of ideas (bipolar disorder), and chronic depressed mood with loss of interest (major depression).

An important differential is whether there is truly loss of control. Children with explosive tantrums often learn that contingent rage is a powerful means of controlling their microenvironment, such as the home or the schoolyard. Thus, although explosive episodes are not inherently antisocial, they have the potential of offering a kind of deviant empowerment, such that the individual senses the power gained from coercing and intimidating others (reciprocal coercive social interactions). Working with children and adults with explosive episodes requires an ability to resist the temptation to give in to the demands associated with the tantrum (Dishion, French, & Patterson, 1995). However, it is often difficult to tolerate the interminable rages of a child and often impossible to ignore the explosive threats of an adult. The distinction between predatory and affective aggression is important, since to the extent that the aggression is affectively driven determines its likelihood of being responsive to medication treatments.

Table 11-3 outlines a classification system to summarize the different types of aggression and medications most useful in treating each type. The scheme is derived in part from the types of medications (e.g., antipsychotic, mood stabilizer, etc.) that different types of aggression seem to respond to in treatment. This scheme can be used to determine medications that might be helpful to a particular patient during treatment planning. It also presents a way of thinking about the causes and underlying mechanisms of aggression.

## TREATMENT OPTIONS

Clinically relevant aggression generally starts with verbal aggression on the part of the patient, followed by verbally aggressive behavior on the part of the clinician, followed by physically aggressive behavior by the patient, and then counteraggression by the staff. It is obvious that the point at which to de-escalate this process is when staff must respond to verbal aggression. Once the patient shows physical aggression, it is too

**Table 11-3**  
**Proposed Subtypes of Aggression and Treatment Implications**

Major Division	Subdivision	Second Subdivision	Implications for First Medication Choice	Relation to Antisocial Behavior
predatory	none	none	none	direct
affective	cognitive	impulsive (e.g., ADHD)	stimulant	indirect
affective	cognitive	paranoid (e.g., schizophrenia; paranoid or schizoid personality)	low dose antipsychotic	indirect
affective	mood	mixed irritable (outer- and inner-directed) (e.g., major depression, dysthymia, borderline personality disorder)	SRI or other antidepressant medication	indirect
affective	mood	outer-directed irritable (e.g., mania, hypomania, explosive mood disorder)	mood stabilizer/anticonvulsant	indirect

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late. A firm, quiet response is therefore almost always the only sane one. Quiet means one does not raise one's voice. Firm means the clinician has adequate physical forces in evident reserve (a show of force in terms of presence of other staff) should the patient not listen. If the patient is sober, a firm quiet response will usually prevent escalation. However, if the patient is intoxicated or has a history of aggression, then a show of force must be present before anyone approaches the client. The clinician should speak in a calm, rational tone, and, unless an arrest or necessary detention is planned (e.g., the patient is judged to be sufficiently dangerous to self or others that involuntary confinement is necessary), the patient should be allowed an obvious escape route.

Any setting that treats potentially violent people must have a well-tested system for surreptitiously summoning help should an interview spin out of control. A button under the desk is one such option. As support staff congregates outside the interview, the clinical manager might comment, "I think you would feel more comfortable if you waited outside" in order to preserve something of a clinical continuity in a frightening situation. No clinician can help a patient he/she is afraid of, and if the clinician fears the patient, the interview must end.

For the treatment of aggression, there are two approaches: psychotherapy and pharmacotherapy.

## Psychosocial and Behavioral Treatments

Two evidence-based behavioral treatments for children and adolescents with aggression and antisocial features illustrate the main concepts of treatment. Parent Management Training is the most common approach in treatment of children, and its lessons generalize

to management of aggression by clinical staff. It emphasizes the need to change reciprocal social interactions typical of children with affective aggression (i.e., coercion—the child (or adult) has learned that aggressive behavior intimidates others and gets them to do what he/she wants; Kazdin, 2000). The important lesson for parents to learn is every time the child avoids a task by throwing a tantrum, the tantrum has been reinforced. If the tantrum does not result in the child avoiding a task, then lack of reinforcement will gradually extinguish the tantrum tactic. Patients must withstand the patient's intensity of rage without giving in. Medication can make a big difference. Medication can diminish the intensity of the aggression, then it is easier for the relevant authority (parents, clinicians, etc.) to maintain the supervisory role.

Another evidence-based psychotherapy is Problem Solving Skills Training (PSST). PSST builds on the inner resources of the adolescent or adult patients and teaches behavioral and cognitive skills for coping with aggressive urges through practice sessions in which graded provocations require patients to use cognitive problem solving skills (Kazdin, 2000; Kazdin & Weisz, 2003). For example, if an adolescent has an art project ruined by another student, the adolescent is taught (through practice and role playing) to think of nonaggressive alternatives to handling this serious provocation. Similarly, an adult version of this approach would use role playing and increasingly more provocative situations to encourage patients to come up with alternative ways of approaching the problem. The difficulty, of course, is that rage and fury can inhibit the implementation of newly learned behavior. Here too, medication can decrease the pressure to revert to maladaptive habits and allow the individual to practice and develop new habits. For both treatments, medications that address the underlying aggressive temperament have the potential to enhance psychotherapies for aggression.

Anger management based on cognitive behavioral principles has become a standard nonpharmacological treatment for explosive adults (Freeman, Felgoise, Nezu, Nezu, & Reinecke, 2005). There are many different forms of this intervention, but they all rely on the principle of problem solving in provocative situations. Clearly, the use of substances like alcohol and other drugs, which generally inhibit problem solving, is strongly discouraged in treatment programs.

## Pharmacologic Treatments

Although pharmacologic agents are commonly used to treat aggressive children, adolescents, and, to some extent, adults, there is no theory-driven algorithm for their prescription. A theory-driven approach of first choice of medication has been developed (Donovan, 2005; see Table 11-3), and it proposes that clinical practice already indicates an approach to first choice of medications for affective aggression based on clinical presentation.

Briefly, the approach requires clinicians to make inferences based on the clinical presentation of what is driving the affective or hot aggression, as it will vary from case to case. In some instances, it will be clear that there is little rage in the individual and that pure impulsivity (hitting first and thinking later) drives the aggression. In this case, the first medication choice is a psychostimulant. Pure impulsive aggression overlaps with (but is not always the same as) ADHD (Klein et al., 1997).

Some hot aggression is not impulsive, but rather is driven by a failure to test reality (for example during psychosis). Such individuals are prone to paranoid thinking, and antipsychotic medications are the first line of treatment.

Irritability is often present in aggressive individuals. This is a state characterized by impatience, intolerance, and poor anger control (Snaith & Taylor, 1985). It appears to be a mood in that if one examines the clinical history, the explosive episodes occur in states that are global but temporary. Two classes of medications are useful, and there appears to be some difference in the kind of person who benefits from one class (as opposed to the other). Some patients benefit from SRI antidepressant medications, such as fluoxetine (Coccaro & Kavoussi, 1997). Others fail to benefit from fluoxetine but respond to divalproex (Kavoussi & Coccaro, 1998).

Work by our group, including a randomized placebo-controlled trial, suggests children, adolescents, and young adults with pure "outer-directed" irritability unquestionably respond to divalproex (Donovan et al., 1997, 2000, 2003). Outer-directed irritability means the angry feelings are directed only at the outside world, never at the self. Clinically, we have found that individuals with pure outer-directed irritability do not do well on serotonin uptake inhibitors (sometimes they even become more explosive).

The irritable, aggressive patients who have benefited from SRI antidepressants in placebo-controlled trials are described as having personality disorders, indicating a chronic or lifelong pattern of maladaptive interpersonal functioning. We suspect this latter group has both inner-directed as well as outer-directed irritability; the inner-directed irritability is characterized by self-criticism, self-loathing, self-harm (suicidal behavior or self-injury), and depressive symptoms. Indeed the mood disturbance in major depression, dysthymia (i.e., chronic depression), bipolar depression, or mixed affective episodes (simultaneous presentation of depression and mania) can present as irritability (see Chapter 1 and Chapter 2 of this volume).

## Organization of Services

It is a major tragedy that due to lack of attention to the origins and potential treatment options for aggression, it largely remains an administrative problem from grade school to substance abuse treatment programs—that is, such individuals are expelled from the classroom or a treatment program and are transferred to special education classrooms, other treatment programs, or the criminal justice system. Dual diagnosis programs reflect increased interest in helping these explosive, unpredictable individuals, but a deeper understanding of aggression is needed.

Individuals with aggression problems are usually aggregated in special education classes as children. If they develop substance abuse problems, they often drop out of school and perhaps have a brief hospitalization, where they are prescribed medications, often with little follow-up. If problems with aggression and substance abuse persist, some contact with the criminal justice system is almost inevitable, often with consequences that tend to promote antisocial attitudes, just as an earlier exposure to special education might (Kellam, Ling, Merisca, Brown, & Ialongo, 1998). If the individual is fortunate and finds a dual diagnosis program that offers treatment for explosive aggressive outbursts, it may be possible to retain the person long enough to provide a program of rehabilitation. However, the reality is that explosive aggressive adolescents and young adults are difficult to retain and difficult to bring into a structured setting. For this reason, judicious use of pharmacologic agents should be considered. It is no more possible to help these individuals when they are throwing tantrums at age 25 than when they

were throwing tantrums in special education classes at age 8. Ultimately, the frightening coercive aspects of explosive rage must be confronted, but first the rage must be dampened. Confrontation of coercion is possible only if the contingent rage is dampened to the point that those trying to help the individual can tolerate and forgive it.

## SUMMARY

Aggression is a common problem in substance abuse treatment settings. Substances of abuse can promote aggression directly through intoxication and withdrawal, and they also foster lifestyles in which antisocial behaviors and aggressive activities, are common. Furthermore, aggression often predates and promotes substance abuse.

Aggression that is part of an antisocial lifestyle is difficult to treat. Aggression that exists independent of it is quite possible to treat.

Individuals with a long history of thrill-seeking violence (cold, predatory aggression) are antisocial by definition, and there is no clear treatment for this type aggression aside from restraining them in some way. Individuals with affective (hot) aggression are amenable to treatment, although they can often have an antisocial lifestyle as a consequence of a long history of maladaptive forms of social learning. It is often possible with a combination of medication and psychotherapy to dampen the hot aggression and, with surveillance and supervision, decrease the antisocial behavior, at least to the point that the person can stay in treatment.

Medications that are useful for hot aggression suggest that there are different tributaries to ultimate expression of the behavior. In some individuals, one tributary is so dominant that a medication immediately suggests itself. In other cases, the clinical phenomena are more mixed. Dismissal of patients should not be a universal response to aggressive behavior.

## *Suggestions for Further Reading*

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For readers who wish to study further in this area, we recommend:

- Coccaro, E. F. (Ed.). (2003). *Aggression: Psychiatric assessment and treatment*. New York: Marcel Dekker.
- Hollander, E., & Stein, D. (Eds.). (2005). *Clinical manual of impulse control disorders*. Washington, DC: American Psychiatric Publishing.
- Kazdin, A., & Weisz, J. R. (2003). *Evidence-based psychotherapies for children and adolescents*. New York: Guilford Press.

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## References

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- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Boyle, M. H., Offord, D. R., Racine, Y. A., Szatmari, P., Fleming, J. E., & Links, P. S. (1992). Predicting substance use in late adolescence: Results from the Ontario Child Health Study follow-up. *American Journal of Psychiatry*, 149, 761-767.
- Bradford, J., Geller, J., Lesieur, H., Rosenthal, R., & Wise, M. (1996). Impulse control disorders. In T. A. Widiger, A. J. Frances, H. A. Pincus, M. B. First, R. Ross, & W. Davis (Eds.), *DSM-IV sourcebook* (Vol. 2, pp. 1007-1031). Washington, DC: American Psychiatric Publishing.
- Caspi, A., Elder, G. H., & Bem, D. J. (1987). Moving against the world: Life-course patterns of explosive children. *Developmental Psychology*, 23, 308-313.
- Chermack, S. T., & Blow, F. C. (2002). Violence among individuals in substance abuse treatment. The role of alcohol and cocaine consumption. *Drug and Alcohol Dependence*, 66, 29-37.
- Coccaro, E. (2002). Intermittent explosive disorder. In E. Coccaro (Ed.), *Aggression: Psychiatric assessment and treatment* (pp. 149-166). New York: Marcel Dekker.
- Coccaro, E. F., & Kavoussi, R. J. (1997). Fluoxetine and impulsive aggressive behavior in personality disordered subjects. *Archives of General Psychiatry*, 54, 1081-1088.
- Coccaro, E. F., Posternak, M. A., & Zimmerman, M. (2005). Prevalence and features of intermittent explosive disorder in a clinical setting. *Journal of Clinical Psychiatry*, 66, 1221-1227.
- Coccaro, E. F., & Siever, L. J. (2002). Pathophysiology and treatment of aggression. In K. L. Davis, D. Charney, J. T. Coyle, & C. Nemeroff (Eds.), *Neuropsychopharmacology: The fifth generation of progress* (pp. 1709-1723). Philadelphia: Lippincott, Williams and Williams.
- Connor, D. F. (2002). *Aggression and antisocial behavior in children and adolescents: Research and treatment*. New York: Guilford Press.
- Dishion, T. J., French, D. C., & Patterson, G. R. (1995). The development and ecology of antisocial behavior. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology* (Vol. 2, pp. 421-471). New York: John Wiley & Sons.
- Donovan, S. (2005). Childhood conduct disorder and the antisocial spectrum. In E. Hollander & D. Stein (Eds.), *Clinical manual of impulse-control disorders* (pp. 39-62). Washington, DC: American Psychiatric Publishing.
- Donovan, S. J., Nunes, E. V., Stewart, J. W., Ross, D., Quitkin, F. M., Jensen, P. S., et al. (2003). "Outer Directed Irritability:" A distinct mood syndrome in explosive youth with a disruptive behavior disorder? *Journal of Clinical Psychiatry*, 64, 698-701.
- Donovan, S., Stewart, J. W., & Nunes, E. V. (2004). *Temper, mood and marijuana—A link at the biological level?* New Research Presentation #129 at the Scientific Proceedings of the American Academy of Child and Adolescent Psychiatry.
- Donovan, S. J., Stewart, J. W., Nunes, E. V., Quitkin, F. M., Parides, M., Daniel, W., et al. (2000). Divalproex treatment for youth with explosive temper and mood lability: A double-blind, placebo-controlled crossover design. *American Journal of Psychiatry*, 157, 818-820.

- Donovan, S. J., Susser, E. S., Nunes, E. V., Stewart, J. W., Quitkin, F. M., & Klein, D. F. (1997). Divalproex treatment of disruptive adolescents: A report of 10 cases. *Journal of Clinical Psychiatry*, 58, 12-15.
- Earls, F., & Mezzacappa, E. (2002). Conduct and oppositional disorders. In M. Rutter & E. Taylor (Eds.), *Child and adolescent psychiatry* (4th ed., pp. 419-436). Oxford, UK: Blackwell Science Ltd.
- Endicott, J., Tracy, K., Burt, D., Olson, E., & Coccaro, E. F. (2002). A novel approach to assess inter-rater reliability in the use of the overt aggression scale-modified. *Psychiatry Research*, 112, 153-159.
- First, M. B. (2004, September). Structured Clinical Interview for DSM-IV-TR Impulse Control Disorders Not Elsewhere Classified (SCID-ICD). New York: Biometrics Research Department, New York State Psychiatric Institute.
- First, M. B., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (2002, November). Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Patient Edition (SCID-I/P). New York: Biometrics Research Department, New York State Psychiatric Institute.
- Freeman, A., Felgoise, S. H., Nezu, A. M., Nezu, C. M., & Reinecke, M. A. (Eds.). (2005). *Encyclopedia of cognitive behavior therapy*. New York: Springer Science + Business Media.
- Giancola, P. R., Godlaski, A. J., & Parrott, D. J. (2005). So I can't blame the booze? Dispositional aggressivity negates the moderating effects of expectancies on alcohol-related aggression. *Journal on Studies of Alcohol*, 66, 815-824.
- Ialongo, N., Edelsohn, G., Werthamer-Larsson, L., Crockett, L., & Kellam, S. (1996). The course of aggression in first-grade children with and without comorbid anxious symptoms. *Journal of Abnormal Child Psychology*, 24, 445-456.
- Kavoussi, R. J., & Coccaro, E. F. (1998). Divalproex sodium for impulsive aggressive behavior in patients with personality disorder. *Journal of Clinical Psychiatry*, 59, 676-680.
- Kazdin, A. E. (2000). Treatments for aggressive and antisocial children. *Child and Adolescent Psychiatric Clinics of North America*, 9, 841-858.
- Kazdin, A. E., & Weisz, J. R. (2003). *Evidence-based psychotherapies for children and adolescents*. New York: Guilford Press.
- Kellam, S. G., Ling, X., Merisca, R., Brown, C. H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology*, 10, 165-185.
- Kessler, R. C., Chiu, W. T., Demler, O., Merikangas, K. R., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-Month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry*, 62, 617-627.
- Klein, R. G., Abikoff, H., Klass, E., Ganeles, D., Seese, L. M., & Pollack, S. (1997). Clinical efficacy of methylphenidate in conduct disorder with and without attention deficit hyperactivity disorder. *Archives of General Psychiatry*, 54, 1073-1080.
- McCardle, L., & Fishbein, D. H. (1989). The self-reported effects of PCP on human aggression. *Addictive Behaviors*, 14, 465-472.
- Robins, L. N. (1966). Deviant children grown up: A sociological and psychiatric study of sociopathic personality. Baltimore: Williams & Wilkens.
- Soller, M. V., Karnik, N. S., & Steiner, H. (2006). Psychopharmacologic treatment in juvenile offenders. *Child and Adolescent Psychiatric Clinics of North America*, 15, 477-499.
- Snaith, R. P., & Taylor, C. M. (1985). Irritability: Definition, assessment and associated factors. *British Journal of Psychiatry*, 147, 127-136.
- Tarter, R. E., Kirisci, L., Mezzich, A., Cornelius, J. R., Pajer, K., Vanyukov, M., et al. (2003). Neurobehavioral disinhibition in childhood predicts early age at onset of substance use disorder. *American Journal of Psychiatry*, 160, 1078-1085.