Intermittent Explosive Disorder-Revised: Development, Reliability, and Validity of Research Criteria

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The study of human aggression has been hindered by the lack of reliable and valid diagnostic categories that specifically identify individuals with clinically significant displays of impulsive aggressive behavior. DSM intermittent explosive disorder (IED) ostensibly identifies one such group of individuals. In its current form, IED suffers from significant theoretical and psychometric shortcomings that limit its use in clinical or research settings. This study was designed to develop a revised criteria set for IED and present initial evidence supporting its reliability and validity in a well characterized group of personality disordered subjects. Accordingly, research criteria for IED-Revised (IED-R) were developed. Clinical, phenomenologic, and diagnostic data from 188 personality disordered individuals were reviewed. IED-R diagnoses were assigned using a best-estimate process. The reliability and construct validity of IED-R were examined. IED-R diagnoses had high interrater reliability (kappa = .92). Subjects meeting IED-R criteria had higher scores on dimensional measures of aggression and impulsivity, and had lower global functioning scores than non–IED-R subjects, even when related variables were controlled. IED-R criteria were more sensitive than DSM-IV IED criteria in identifying subjects with significant impulsive-aggressive behavior by a factor of four. We conclude that in personality disordered subjects, IED-R criteria can be reliably applied and appear to have sufficient validity to warrant further evaluation in field trials and in phenomenologic, epidemiologic, biologic, and treatment-outcome research.

DESPITE THE COMMON OCCURRENCE of inappropriate, impulsive-aggressive behaviors in our society, the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) continues to be deficient in identifying individuals with problematic behaviors of this type.[1] Although aggressive behaviors are sometimes observed in individuals diagnosed with established DSM major mental disorders (e.g., schizophrenia, bipolar disorder), clinical experience suggests that many nonpsychotic/nonbipolar (e.g., personality-disordered) individuals have clinically significant impulsive-aggressive behaviors that cannot be specifically identified by a DSM diagnostic category.[1]

The clinical relevance of impulsive-aggressive behavior is underscored by the many studies conducted in this area in the last two decades. First, impulsive-aggressive behavior is associated with compromised central serotonergic (5-HT) system functioning.[2] Second, data from family history,[3-5] and twin studies[6-8] provide evidence for a genetic component for aggressivity and impulsivity. Third, impulsive-aggressive behavior can be treated by both pharmacologic[9] and psychotherapeutic interventions.[10] To date, clinical trials have provided evidence that agents such as lithium,[11] carbamazepine,[12] and fluoxetine[13-15] can reduce impulsive-aggressive behavior. In addition, other agents, such as amitriptyline[16] and alprazolam[17] have been found to increase impulsive-aggressive behavior.

Currently, the only recognized set of DSM diagnostic criteria set to describe nonpsychotic/nonbipolar aggressive individuals is intermittent explosive disorder (IED). Serious theoretical and practical shortcomings limit the usefulness of both the DSM-III-R and DSM-IV IED criteria sets for categorizing individuals exhibiting clinically significant problems with aggressive behavior. For example, if DSM-III-R criteria for IED are applied, most individuals who have clear problems with impulsive-aggressive behavior will not be assigned this diagnosis.[18] This is due, in part, to the narrow definition of IED in DSM-III-R, which excludes individuals who are impulsive and aggressive between periods of more serious outbursts. This criterion was eliminated in DSM-IV, broadening the definition of IED.

Despite this modification, DSM-IV IED continues to be a problematic diagnostic entity. First, the diagnosis of IED is only allowable in individuals who commit severe acts of aggression (e.g., serious physical assault, destruction of objects). Many individuals with impulsive-aggressive behaviors

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commit less severe acts of aggression, which, nonetheless, are associated with subjective distress, functional impairment, or legal problems. Second, a diagnosis of IED cannot be made in individuals also diagnosed with either antisocial (AsPD) or borderline (BPD) personality disorder. Although several individuals diagnosed with AsPD or BPD will behave aggressively from time to time, not all individuals carrying these diagnoses have a prominent history of impulsive-aggressive behavior. Failure to identify impulsive-aggressive behavior as the primary clinical concern will lessen the chance of treatment targeted specifically to these behaviors.

Given the problems with the current diagnostic criteria set for IED, we are proposing a revision of the DSM criteria for IED for research purposes so that individuals with frequent impulsive-aggressive behaviors, which are severe enough to lead to significant subjective distress or functional impairment, can be more accurately identified for study. After formulation of these criteria, we examined the interrater reliability and the behavioral correlates of this research diagnosis in a series of 188 personality-disordered patients.

METHODS

Subjects

This report provides data from 188 subjects meeting DSM-III-R[19] criteria for personality disorder (men, n = 140; women, n = 48) systematically evaluated in regard to aggressive, suicidal, self-injurious, and other behaviors as part of a larger program designed to study the biological and treatment correlates of impulsive-aggressive behavior in personality-disordered subjects. Subjects were recruited for this study by newspaper and public service announcements that sought subjects with anger and aggression problems and, for comparison, subjects without self-reported anger or aggression problems. Written informed consent, using an institutional review board–approved consent document, was obtained from all subjects after all procedures were fully explained.

Diagnostic Entry Criteria and Assessment

Only personality disorder subjects were eligible for study; subjects with a life history of mania/hypomania, schizophrenia, delusional disorder, current alcoholism, or drug use disorder were excluded from this study. Axis I and axis II personality disorder diagnoses were made according to DSM-III-R criteria (note: because data collection began in the DSM-III-R era, only DSM-III-R diagnoses are reported, except in the case of IED, in which both DSM-III-R and IV diagnoses are reported). Diagnosis of alcoholism was made by modified Research Diagnostic Criteria as in our previous reports.[20,21] Final diagnoses were assigned through a best-estimate process[22,23] with two psychiatrists and three psychologists based on information obtained through the following: (1) interviews by trained clinicians using the Schedule for Affective Disorders and Schizophrenia (SADS)[24] and the Structured Interview for the Diagnosis of DSM-III-R Personality Disorder (SIDP-R)[25]; (2) clinical interviews by a research psychiatrist; and (3) review of all other available clinical data. One best-estimator reviewed all available information and summarized this information in a written narrative report with suggested diagnoses. This written report was then reviewed and final consensus best-estimate diagnoses (all axis I and II diagnoses both current and past as an adult) were assigned by the best-estimate board.

Formulation of Revised Criteria for IED

Proposed revised diagnostic criteria for IED (IED-R) are listed in Table 1. These criteria describe an individual with a history of recurrent aggressive behavior expressed verbally, indirectly at objects, or physically directed at other individuals. This behavior occurs in discrete outbursts, and, if not physically assaultive, must be judged to be intense in nature. In other words, for example, brief verbal arguments in which the individual simply raises his or her voice would not be rated as meeting this criteria; evidence of shouting and loss of control during the outburst would be necessary for this behavior to be rated as counting towards the IED-R diagnosis. The aggressive behavior occurs in response to a perceived provocation, but is clearly out of proportion to that provocation. The aggressive behavior is not premeditated and is not exploited for personal gain; it is therefore "impulsive" in nature.[26] The aggressive behavior is not better explained by psychosis, mania, major depression, substance use disorders, or general medical conditions. The behavior occurs at least twice weekly (or eight times in a month), and it must specifically be associated with distress to the individual or with evidence of impairment in social and/or occupational function.

Diagnostic Assessment Study for IED-R

IED-R diagnoses were made based on review of clinical charts, SADS and SIDP-R interviews, and the Overt Aggression Scale-Modified for outpatients (OAS-M).[27] The OAS-M as-

Table 1. Diagnostic Criteria for IED-R

A. Recurrent incidents of verbal or physical aggression towards other people, animals, or property.
B. The degree of aggressive behavior is out of proportion to the provocation.
C. The aggressive behavior is generally not premeditated (e.g., is impulsive) and is not committed in order to achieve some tangible objective (e.g., money, power, etc.).
D. Aggressive outbursts occur twice a week, on average, for at least a period of 1 month.
E. Aggressive behavior is not better accounted for by mania, major depression, or psychosis. It is not solely due to the direct physiological effect of a substance (e.g., drug of abuse) or of a general medical condition (e.g., closed head trauma, Alzheimer's).
F. The aggressive behavior causes either marked distress (in the individual) or impairment in occupational or interpersonal functioning.