History of childhood maltreatment in Intermittent Explosive Disorder and suicidal behavior

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A R T I C L E   I N F O
Article info
Article history:
Received 31 December 2013
Received in revised form 2 April 2014
Accepted 11 April 2014

Keywords:
Intermittent Explosive Disorder
Aggression
Impulsivity
Suicide attempt
Childhood maltreatment

A B S T R A C T
Intermittent Explosive Disorder (IED) is a relatively common disorder of impulsive aggression that typically emerges by adulthood. Maltreatment in childhood (CM) may contribute to the development of IED, but little is known about the association between CM and IED, including about how subtypes of CM may specifically relate to IED. This study aimed to test the association between CM and IED diagnosis. A second aim was to examine history of CM in suicide attempters, and to explore whether impulsivity and aggression account for the relationship between CM and suicide attempt (SA). Adults with Intermittent Explosive Disorder (IED; n = 264), with non-IED psychiatric (Axis I or II) disorders (psychiatric controls; PC; n = 199), and with no psychiatric disorder (healthy control subjects; HC; n = 185) were assessed for history of childhood maltreatment, aggression, impulsivity, and history of SA. IED subjects reported significantly greater CM compared to PC and HC subjects, and suicide attempters (n = 62) reported greater CM compared to non-attempters (n = 586). Physical abuse in childhood was independently associated with IED, while sexual abuse and emotional abuse were independently associated with SA. Impulsivity and aggression were potential mediators of the relationship between physical abuse and IED and emotional abuse and SA, but sexual abuse was associated with SA independently of aggression and impulsivity. The results suggest pathways by which environmental factors may influence impulsivity and aggression and, in turn, clinically significant self- and other-directed aggression.

1. Introduction

Aggression and suicide are destructive behaviors that exact a considerable toll on individuals, families, and society. Each year, approximately 1.6 million people die as a result of violence, both self- and other-directed (WHO, 2009), and these events and other non-lethal forms of aggression (i.e., interpersonal assaults and suicide attempts) have substantial economic costs (Czernin et al., 2012; WHO, 2004). Despite the severity of these behaviors they are relatively common. In the National Comorbidity Study (NCS), 4.6% of respondents reported making a suicide attempt in their lifetime (Kessler et al., 1999), while the lifetime prevalence of clinically significant aggression, as defined by Intermittent Explosive Disorder (IED) DSM-IV criteria, was reported as high as 7.3% (Kessler et al., 2006).

Impulsive aggression is the core feature of IED and is also a risk factor for suicidal behavior, making it an important target of efforts to reduce both self- and other-directed aggressive behavior. Behavioral genetics studies indicate that both genetic and environmental factors contribute to the development of aggression (Coccaro et al., 1997a; Miles and Carey, 1997; Yeh et al., 2010); however, relatively little is known about environmental variables which may contribute to the development of clinically significant impulsive aggression (IED). Understanding the factors that promote the development of impulsivity and aggression (and which may in turn increase the likelihood of suicide attempt and persistent aggression) is thus an important scientific and therapeutic goal.

One set of environmental circumstances that has been shown to contribute to the development of impulsive aggression is childhood maltreatment (CM). CM includes experiences of physical, emotional, and sexual abuse, and emotional and physical neglect. CM predicts a range of negative outcomes, including psychopathology (Briere and Elliott, 2003; Green et al., 2010; Lobbestael...
aggression (Singer et al., 1999; Song et al., 1998), and suicidal behaviors (Miller et al., 2013; Silverman et al., 1996), but little is known specifically about the role of CM in the development of IED. Individuals with IED have been found to have significant histories of trauma (e.g., accidents, disaster-related traumas; Fincham, 2011), and interpersonal traumas and traumas experienced early in life are particularly predictive of IED (Nickerson et al., 2012), suggesting that CM may significantly increase the risk of developing IED. Furthermore, childhood adversities related to a maladaptive family environment have been shown to be particularly predictive of later psychopathology in general (Green et al., 2010; McLaughlin et al., 2012). Studies on the effects of CM on suicidality suggest that most forms of CM increase the risk of suicide attempt when considered separately (Miller et al., 2013), but that sexual, physical, and emotional abuse are particularly robust predictors when different forms of CM are considered together in multivariate analyses (Beautrais et al., 1996; Hacker et al., 2006; Joiner et al., 2007; Ystgaard et al., 2004).

In addition to being a core feature of IED, impulsive aggression is also associated with Antisocial Personality Disorder (ASPD) and Borderline Personality Disorder (BPD). Further, suicide attempters and completers have been found to have higher levels of impulsivity compared to healthy controls (Lobbestael et al., 2010; Silverman et al., 2013), but that sexual, physical, and emotional abuse are significantly associated with impulsivity and aggressiveness and thereby increase the risk of negative outcomes.

2. Methods

2.1. Subjects

Six-hundred-forty-eight medically healthy subjects participated in this study as research volunteers. All subjects were systematically sampled from a medical and research database of individuals with Axis I and II disorders. By definition, none of the 185 healthy control subjects had a current or lifetime history of any syndromal or personality disorder. Demographic characteristics of the subjects are displayed in Table 1. Rates of syndromal and personality disorders among the 199 PC and 264 IED subjects are displayed in Table 2. In order to test whether these effects were independent of Antisocial and Borderline Personality Disorders, as these are associated with impulsivity, aggression, suicide risk, and early life trauma (Beautrais et al., 1996; Brodsky et al., 2001; Lobbestael et al., 2010; Silverman et al., 1996), we included these diagnoses as covariates in a final logistic regression model. We predicted that: 1) IED subjects would report more childhood maltreatment compared with healthy control and psychiatric control subjects; 2) subjects with history of suicide attempt would report more CM and have higher scores on aggression and impulsivity; and 3) trait aggression and impulsivity assessed dimensionally would at least partially explain the relationship between CM and the risk of suicide attempt for SA, suggesting that CM may increase impulsivity and aggressiveness and thereby increase the risk of negative outcomes.
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