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Research report

Posttraumatic Stress Disorder following childhood abuse increases the severity of suicide attempts

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ABSTRACT

Objective: Posttraumatic Stress Disorder (PTSD) and childhood abuse are both consistently associated with a higher risk for suicide attempts. We hypothesize that among patients reporting childhood abuse, PTSD diagnoses are correlated with an increased severity of suicidal features.
Method: We investigated 726 adult patients who had attempted suicide. These participants were assessed on lifetime clinical diagnoses and childhood abuse. The association of PTSD and childhood abuse dimensions with age at first suicide attempt, number of suicide attempts, violent attempts, serious attempts and suicide intent was studied. An adjusted multinomial logistic regression was performed to ascertain if childhood abuse and PTSD increased the severity of the suicidal behavior when combined.
Results: Several types of childhood abuse (emotional, physical and sexual abuse) when combined with a lifetime diagnosis of PTSD showed an increased risk for more suicide attempts, serious attempts, and a higher level of suicidal intent compared with the absence of any or both risk factors.
Conclusion: The combination of PTSD and childhood abuse should be investigated in clinical settings due to an augmented risk for more severe suicidal behavior.

1. Introduction

The development of Posttraumatic Stress Disorder (PTSD) depends on the type and severity of trauma exposure, as well as on individual vulnerability (Davidson et al., 2004). In Europe, the lifetime prevalence of PTSD has been estimated at 1.9% (Alonso et al., 2004), although rates may largely vary between countries (Hauffa et al., 2011). When present, PTSD has been repeatedly associated with a high suicidal risk (Krysinska and Lester, 2010). In fact, PTSD diagnoses, but not trauma exposure, were recently associated with suicide attempts (SA) in a community sample of urban American young adults (Wilcox et al., 2009). This association between PTSD and subsequent SAs appears to be independent of other mental disorders (Wilcox et al., 2009; Krysinska and Lester, 2010). Moreover, among mental disorders, PTSD has been estimated to be the fourth-ranked contributor to SAs with a 6.3% population-attributable fraction (Bolton and Robinson, 2010). This figure provides an approximation of the incidence of SAs that is directly linked to PTSD diagnoses.

Childhood abuse is a prevalent public health problem that causes significant physical, psychological and societal consequences (Lu et al., 2008) and is also strongly associated with later SAs (Lopez-Castroman et al., 2012). In high-income countries, physical abuse may affect 4–16% of children, while 15–30% of girls and 5–15% of boys may suffer sexual abuse (Gilbert et al., 2009). Moreover, childhood abuse is a powerful predictor of future PTSD, in children and adolescents (Kearney et al., 2009) or adults (Ozer et al., 2003; Cloitre et al., 2010), and later-life revictimization, particularly among sexually-abused women (Coid et al., 2001).

Several studies have investigated the link between childhood abuse and PTSD. The adjusted odds ratio for a lifetime diagnosis of PTSD following childhood maltreatment has been estimated to be 4.86 (Scott et al., 2010). Among individuals with PTSD, childhood abuse is associated with more comorbid mood disorders and more severe symptomatology (Teicher and Samson, 2013). Besides, a diagnosis of PTSD is more likely if the abused subject experiences another traumatic event as an adult (Xie et al., 2009). Although the mechanisms that link PTSD and childhood abuse with SAs are yet unknown, they may share some pathophysiological pathways.

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Autonomic and hypothalamic–pituitary–adrenal axis responses are altered in both conditions (Davidson et al., 2004; Carpenter et al., 2007) and may lead subjects experiencing childhood abuse and PTSD towards emotion dysregulation and interpersonal difficulties (Cloitre et al., 2010). Prior vulnerability traits, such as impulsive aggression, may be associated with the development of PTSD after a traumatic experience (Oquendo et al., 2005), and similar traits have been associated with childhood abuse and its transmission within families (Lopez-Castroman et al., 2012). Impulsivity might actually facilitate SAs through habituation to pain and fear, which impulsive individuals apparently experience more often (Bender et al., 2011). Therefore, an increased risk of suicide among abused subjects with subsequent PTSD can be expected.

In this study we aim to investigate if the combination of childhood abuse and PTSD increases the severity of suicidal behaviors. We assessed a large sample of suicide attempters to ascertain a history of childhood abuse and a lifetime diagnosis of PTSD. We then examined the subtypes of childhood abuse, (i.e., emotional neglect, physical neglect, emotional abuse, physical abuse, sexual abuse) as well as the effect of PTSD as independent risk factors for more severe suicidal behaviors using five different indexes. We hypothesized that the occurrence of PTSD after childhood abuse would be associated with more severe suicidal behaviors during the lifetime of the participants, especially when reporting physical or sexual abuse.

2. Materials and methods

2.1. Participants

Study participants were identified from a cohort of suicide attempters ($n=1941$), consecutively hospitalized and survivors of a current SA in a specialized unit of the Montpellier University Hospital. SAs were defined as self-injury behaviors with a non-zero level of suicidal intent (Silverman et al., 2007). Patients were aged 18 years old and over, French speaking, and had all four biological grandparents originating from Western European countries (for genetic purposes). All participants completed and returned a consent form. Overall, 726 patients had completed a diagnostic evaluation (including PTSD and major depression) and a questionnaire on childhood trauma. Excluded subjects presented a lower educational level and were less often diagnosed with non-PTSD anxiety disorders ($p<0.05$ for all comparisons), but did not statistically differ on the other socio-demographic and clinical variables. Trained psychiatrists or psychologists interviewed all patients. The local research ethics committee approved this study (CPP Sud Mediterranée IV, CHU Montpellier, France).

2.2. Assessment

Patients were evaluated after remission of a potential mood episode (i.e. a current Hamilton Depression Rating Scale score below 15) (Hamilton, 1960). Either the French version of the Diagnostic Interview for Genetics Studies (DIGS) (Preisig et al., 1999) or the Mini International Neuropsychiatric Interview (MINI) (Sheehan et al., 1998) was used to obtain Axis I DSM-IV diagnoses. Lifetime diagnoses were determined using a best-estimate procedure: the psychiatrist in charge of the patient's care assigned the diagnosis based on MINI or DIGS interview, medical records and, when available, information from relatives (Kosten and Rounsaville, 1992).

Lifetime PTSD diagnoses were assigned following MINI criteria for current or past PTSD. The assessment of the history of childhood trauma was performed using the short version of the Childhood Trauma Questionnaire (CTQ) (Bernstein and Fink, 1998). It is a 28-item self-report questionnaire that investigates retrospectively five dimensions of child maltreatment: emotional abuse, emotional neglect, physical abuse, physical neglect and sexual abuse. Cut-off scores have been set for each type of trauma at four levels of maltreatment: None, Low, Moderate and Severe. The different cut-offs have been shown to have good specificity and sensitivity (Bernstein and Fink, 1998). Childhood trauma was considered only with moderate or severe scores.

The suicide assessment procedure was based on the Columbia Suicide History Form (CSHF, Mann et al., 1999) and the Section O of the DIGS. The procedure is a semi-structured interview with validated questionnaires to collect information about sociodemographic features and characteristics of the suicide attempts. These questionnaires elicit in-depth information about lifetime suicide attempts, including suicidal methods and triggers, with questions such as “How many times have you tried to kill yourself?” (DIGS) or “When was the first time he/she ever made an attempt?” (CSHF). A suicide attempt was defined as violent, according to Asberg et al.'s (1976) criteria, when the method of suicide attempt was hanging, use of firearms, jumping from heights, several deep cuts, car crash, burning, gas poisoning, drowning, electrocution, or jumping under a train. Those suicide attempts that required intensive care interventions were considered serious. Age at first attempt was defined as the age at which the patient first made a SA. Age at first attempt was assessed by the interviewer and then blindly rated by an independent psychiatrist according to medical case notes and interviews. Cut-off for early age at first SA was set according to a mathematical modelization made in a previous study. In that study, the clinical picture and the history of childhood abuse differed between subjects younger or older than 26 years of age (Hamilton, 1960; Slama et al., 2009). The number of SAs for the analyses was also categorized using 1–2 and >2 as cut-off (Preisig et al., 1999; Lopez-Castroman et al., 2011).

We further characterized suicidal behavior using the French version of the Suicide Intent Scale (SIS) (Beck et al., 1979; Sheehan et al., 1998), a 15-item semi-structured rating scale yielding a global score that indicates the severity of the suicidal intent. For each subject, only the highest SIS score of all previous SA was analyzed. Two subscales of the SIS were studied: expected lethality and planning (Brezo et al., 2008). The cut-off for the analyses of SIS scores was established using the higher tertile (SIS score ≤ 19 or >19).

2.3. Statistical analysis

Associations between suicidal indexes (age at first SA, number of SA, SIS score, serious suicide attempt and violent suicide attempt) and subject characteristics, PTSD diagnosis and CTQ dimensions were quantified with odds ratios (OR) and their 95% Confidence Intervals (CI). Sociodemographic, and clinical variables associated with outcome variables (at $p<0.05$) were included in logistic regression models to estimate adjusted ORs for PTSD diagnosis and CTQ dimensions.

When appropriate (i.e., when PTSD diagnosis or CTQ dimensions were significantly associated with the suicidal indexes), the interaction terms were tested using Wald χ^2 tests given by the logistic regression model. If the interaction was not significant, we studied the additive effects of PTSD diagnosis and CTQ dimensions dividing the sample into 4 groups for each outcome variable: 1) subjects who reported both the childhood trauma and PTSD; 2) subjects who reported the childhood trauma but were not diagnosed with PTSD; 3) PTSD subjects not reporting childhood trauma; and 4) subjects who denied both risk factors. Significance level was set at $p<0.05$. Given the exploratory nature of our study, multiple test adjustments were not made (Rothman, 1990; Savitz