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Research paper

Early life stress, resilience and emotional dysregulation in major depressive disorder with comorbid borderline personality disorder

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ABSTRACT

Background: Borderline personality disorder (BPD) show different course and treatment compared to major depressive disorder (MDD). Early life stress may increase BPD onset; however, resilience may play a protective role against the development of psychopathology. The goal of this study was to compare the early life stress, resilience, and the clinical characteristics of emotional dysregulation in patients with MDD with and without comorbid BPD.

Methods: Thirty patients with both BPD and MDD, 25 patients with MDD alone, and 25 age- and sex- matched healthy controls, participated in this study. Analysis of variance was used to compare the early life stress, resilience, and emotional dysregulation among groups. Also, multivariate logistic regression models were used to identify the relationship of the early life stress and resilience domains with BPD comorbidity within MDD patients.

Results: The domains of emotional abuse and self-regulation ability were significantly associated with BPD comorbidity and BPD severity. In emotional dysregulation, difficulty scores of impulsivity, coping strategies, and emotion clarity domains were significantly increased in patients with both BPD and MDD compared to patients with MDD alone.

Limitations: The relatively small sample size may contribute to reduce statistical power of investigation.

Conclusions: Emotional abuse experiences in early life, and deficits in self-regulation, are significantly associated with comorbid BPD in patients with MDD. A comprehensive evaluation including early life stress, resilience and emotion regulation ability may help to identify comorbid BPD in patients with MDD and develop treatment strategies.

1. Introduction

Major depressive disorder (MDD) frequently coexists in patients with borderline personality disorder (BPD) (Zanarini et al., 1998). Depressive patients with BPD report more severe symptoms of depression (Stanley and Wilson, 2006) and show more risk for recurrence of depressive episodes in longitudinal study (Gunderson et al., 2008). As antidepressants show modest effect (Gunderson et al., 2004) and psychotherapy should not be missed as a treatment method on patients with BPD (American Psychiatric Association. Work Group on Borderline Personality Disorder, 2001), an organized initial evaluation assessing borderline personality traits is necessary for patients who complain depressed mood. However, it is not common to diagnose BPD comorbidity within patients with MDD in clinics and few integrative studies have explored the complex features of comorbid BPD within an MDD population.

Early life stress (ELS), including emotional, physical, and sexual abuse or neglect (Lanius et al., 2010), may be related to mental health in adulthood (Alastalo et al., 2013). Biologically, ELS results in changes of BDNF gene expression (Aguilera et al., 2009), increased activity of the amygdala (Huang and Lin, 2006), and reduced volume of the limbic system (Dannlowski et al., 2012). Epidemiological studies demonstrate

Abbreviations: BPD, borderline personality disorder; MDD, major depressive disorder; ELS, early life stress; SCID, Structured Clinical Interview for DSM-IV-TR; IRB, Institutional Review Board; BDI, Beck Depression Inventory; PAI-BOR, the personality assessment inventory-borderline personality disorder scale; KRQ, the Korean resilience questionnaire; DERS, the Difficulties in emotion regulation scale; IMPULSE, impulse control difficulties; STRATEGIES, limited access to emotion regulation strategies; CLARITY, lack of emotional clarity; NONACCEPTANCE, nonacceptance of emotional responses; GOALS, difficulties engaging in goal-directed behaviors; AWARENESS, lack of emotional awareness

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Table 1
Clinical characteristics of the participants.

Characteristics	BPD-MDD (n = 30)	MDD (n = 25)	HC (n = 25)	F/ χ^2	Sig.
Male/Female [a]	9/21 (30.0%)	12/13 (48.0%)	9/16 (36.0%)	1.9	0.38
Age (years) [a]	25.9 ± 5.8	31.9 ± 7.4	29.2 ± 6.5	5.7	0.005
T[b]	A	B	A, B		
Education year [a]	15.0 ± 1.9	15.7 ± 2.1	15.6 ± 2.0	0.9	0.40
BDI score [c]	33.5 ± 2.1	26.7 ± 2.3	3.9 ± 2.2	50.4	< 0.001
PAI-BOR score [c]	51.8 ± 1.8	32.4 ± 2.0	–	48.6	< 0.001

Abbreviation> BDI, beck depression inventory; PAI-BOR, personality assessment inventory-borderline personality disorder; BPD–MDD, patients with both major depressive disorder and borderline personality disorder; MDD, patients with major depressive disorder only; HC, healthy controls.

[a] Statistical significances were tested by one-way analysis of variances among groups for continuous variables and chi-square for categorical variable.

[b] The same letters indicate non-significant difference between groups based on Bonferroni's multiple comparison test.

[c] Statistical significances of BDI and PAI-BOR differences within patients group were tested by one-way analysis of covariance controlling for age for score.

that ELS such as sexual, physical, and emotional abuse influences the onset of psychiatric disorders and is particularly associated with the earlier onset and more severe course of both BPD (Herman et al., 1989; Lohr et al., 1990; Zanarini et al., 1989) and MDD (Bernet and Stein, 1999; Bifulco et al., 2002; Brown et al., 1999; Mandelli et al., 2015).

Some individuals are resistant to adversities and grow up well-adjusted despite ELS (Garmezy and Rutter, 1983; Werner and Smith, 1992), suggesting the presence of resilience. Resilience refers to positive adaptability or the ability to maintain or regain mental health in the face of adversity (Rutter, 2006). Resilient individuals show different psychosocial characteristics under stressful condition compared to patients with MDD, including positive emotions (Hasler et al., 2004; Manne et al., 2003; Thorson and Powell, 1994; Southwick et al., 2005) and the availability of social support (Rhodes et al., 1992; Stice et al., 2004; Travis et al., 2004). In patients with BPD, factors as secure attachment type (Barone, 2003) or no family history of substance use disorder (Zanarini et al., 2006) play a protective role in the onset or remission of BPD. In addition to social or environmental resources, it is important to identify the self-related factors that could be improved with treatments in patients with both BPD and MDD but there is a lack of study on these factors.

Unlike ELS and resilience which are past experiences and a personal resource, emotional dysregulation is one psychopathology that distinguishes BPD from MDD in the current state. The problem of emotion is a core feature in patients with BPD (Brown et al., 2002; Glenn and Klonsky, 2009), and emotional dysregulation which defines as the inability to modulate and manage emotions is more specifically associated with BPD (Conklin et al., 2006) and prominent in separation situations (Kohling et al., 2016). Emotional dysregulation of patients with MDD is different from those with BPD and may be used as a basis for distinguishing patients. Patients with MDD showed better emotion regulation capacity than patients with BPD (Dixon-Gordon et al., 2015; Rogers et al., 1995; Westen et al., 1992). Given the importance, emotional dysregulation as the core psychopathology of BPD can be assessed into six detailed domains as follows (Gratz and Roemer, 2004); a tendency to have dissenting secondary emotional responses to one's negative emotions or nonaccepting reactions to one's distress (NONACCEPTANCE), difficulties focusing and completing tasks when experiencing negative emotions (GOALS), troubles in controlling one's behavior experiencing negative emotion (IMPULSE), inability to attend to and recognize emotions (AWARENESS), lack of confidence to find strategies for effective regulation of emotion in upsetting situation (STRATEGIES), and clarity of knowledge about the emotions when experiencing uncomfortable emotions or distress (CLARITY). Understanding the exact phenotypes of emotion regulation problems in patients with BPD and MDD will help establish a treatment strategy.

The purpose of this study was to compare the ELS and resilience which affects the onset of disorders, and compare the clinical characteristics of emotional dysregulation in patients with MDD with and without comorbid BPD. Considering that depressive symptoms in BPD are more severe (Gunderson et al., 2004; Gunderson et al., 2008; Stanley and Wilson, 2006), we predicted that patients with both BPD and MDD would experience more ELS and be less resilient when compared to patients with MDD alone. In addition, we would find more severe emotional dysregulation in patients with both BPD and MDD than those with MDD alone found in previous studies (Dixon-Gordon et al., 2015) and would suggest the possibility of applying the findings to treatment strategies.

2. Methods and materials

2.1. Participants

Patients who visited Gangnam Severance Hospital for the first time from January 2014 to December 2015 were recruited for the study. All patients were between 18 and 65 years of age and psychotropic drug-naïve or did not take medications in the previous month. The Structured Clinical Interview for DSM-IV-TR Axis I disorder (SCID-I) and Axis II personality disorders (SCID-II) for borderline personality disorder were conducted. Patients who met the criteria for both MDD and BPD were assigned to BPD–MDD group, and patients with MDD and without BPD were assigned to MDD group. Exclusion criteria were: previous diagnosis of a psychotic disorder, bipolar I disorder, and current abuse of alcohol or other substances. Thirty patients in the BPD–MDD group and 25 patients of MDD group participated in the study (Table 1). The BPD–MDD and MDD groups were considered the patient groups. Twenty-five age- and sex- matched healthy individuals, recruited from the community through an advertisement on the website, served as controls. Participants had no history of other medical or neurological illness. The Institutional Review Board (IRB) of Yonsei University Gangnam Severance Hospital approved the study, and written informed consent was obtained from all participants before the study enrollment [IRB approval number: 3-2013-0339].

2.2. Measures

2.2.1. Beck depression inventory

The beck depression inventory (BDI) was used to assess the severity of depression. The BDI is a 21-question self-report inventory with a 4-point score, ranging from 0 to 3. The reliability and validity has been confirmed (Beck et al., 1988). Higher scores indicate more severe depressive symptoms.

2.2.2. Personality assessment inventory-borderline personality disorder

Features of borderline personality were assessed in patient groups with the personality assessment inventory-borderline personality disorder scale (PAI-BOR) (Morey, 1991). This is a 24-item scale that measures four central features of BPD: affective instability, identity problems, negative relationships, and self-harm. Items are rated on a 4-point scale (false, slightly true, mainly true, and very true). This scale is