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Childhood adversity and clinical features of bipolar mood disorder

Paulina Jaworska-Andryszewska, Janusz K. Rybakowski

Summary

Aim: Assessing associations between a type of childhood adversity and clinical features of the illness in patients with bipolar disorder.

Materials and methods: The study involved 52 patients with bipolar disorder aged 47+12 years. A questionnaire on family history and the course of the disorder, the Childhood Trauma Questionnaire (CTQ) – Polish version and a dedicated study questionnaire on negative experiences in childhood were employed on patients during a period of remission.

Results: Emotional abuse and neglect were associated with the highest number of unfavorable clinical features of bipolar disorder, predicting psychotic symptoms, suicidal attempts, rapid cycling and anxiety disorders. Emotional abuse was also connected with a lower risk of hypertension. The total result on the CTQ was correlated with psychotic symptoms and rapid cycling, sexual abuse was linked to earlier onset of the illness, and long-term separation from parents was associated with comorbid anxiety disorders and obesity. Some of these associations were sex-dependent. A connection was also found between unfavorable clinical features of bipolar disorder and family history of psychiatric disorders.

Discussion: The results of the study confirm a relationship between negative events in childhood and unfavorable features of bipolar disorder. They also suggest an enduring effect of these events manifesting as somatic conditions in adult bipolar disorder patients.

Conclusions: In studying patients with bipolar disorder, we found specific associations between the type of childhood adversity and psychiatric and somatic aspects of the illness. Emotional abuse and neglect appear to exert the biggest impact in this respect.

childhood adversity, bipolar disorder, emotional abuse

INTRODUCTION

In recent decades it has been demonstrated that adverse life events, especially in childhood, can significantly contribute to both the occurrence and clinical course of bipolar mood disorder [1-3]. Patients with bipolar disorder have experienced negative events in childhood more often than healthy subjects. A study by Etain et al. [4] on a group of 206 patients with bipolar disorder and 94 controls demonstrated that patients experienced significantly more complex traumas during childhood (63%) than did controls (33%). Research conducted by Garno et al. [5]

Paulina Jaworska-Andryszewska[1,2], **Janusz K. Rybakowski**[1]: [1]Department of Adult Psychiatry, Poznan University of Medical Sciences, Poznań, Poland; [2]University of Social Sciences and Humanities, Poznań, Poland
Correspondence address: janusz.rybakowski@gmail.com

showed that 51% of bipolar patients reported childhood abuse and neglect, 37% experienced emotional abuse, 24% physical abuse, 24% emotional neglect, 21% sexual abuse and 12% physical neglect. Among childhood events that may have an impact on the incidence of bipolar disorder an early loss of a parent or prolonged separation from parents caused a 2.6-fold increase in the risk of developing bipolar disorder [6]. A significant association between childhood separation and increased risk of bipolar disorder was also reported recently [7]. In our previous study, comparing age – and sex-matched groups of 52 patients with bipolar disorder and 52 control subjects, we found that patients had experienced more physical, emotional and sexual abuse, more emotional and physical neglect and also such negative childhood events as parental death, abandonment, divorce and prolonged separation [8].

Negative childhood experiences can also have a significant impact on the clinical course of bipolar disorder, and a variety of associations has been reported between the types of negative childhood experiences and different aspects of the illness. Experiencing physical abuse in childhood has been connected with an earlier onset of the illness, a delay in making a diagnosis and starting treatment, as well as with rapid-cycling, psychotic symptoms, suicide attempts, more severe manic episodes and more hospitalizations. Patients experiencing physical abuse also more often suffered from post-traumatic stress disorder (PTSD) and had problems with psychoactive substance use [5,9-18]. Sexual abuse in childhood has been associated with early onset of the illness, delayed treatment, rapid cycling, more suicide attempts, higher incidence of psychotic symptoms and increased severity of manic episodes. As with physical abuse, sexual abuse has been related to comorbidity with PTSD and addiction to psychoactive substances [5,9-11,15-19].

In a study by Etain et al. [4,16] emotional abuse was associated with an earlier onset of the illness, suicide attempts, rapid cycling, more depressive episodes, more episodes of mania and hypomania and cannabis abuse. Garno et al. [5] noted that emotional abuse was related to drug abuse and rapid cycling, and Kessing et al. [20] discovered that neglect in childhood was connected with early onset of the disorder.

Post et al. [21], having examined 900 bipolar patients, found that negative experiences in childhood, particularly physical, emotional and sexual abuse and parental mood disorders, substance abuse and suicidal tendencies were all associated with comorbid somatic diseases. Patients with a history of physical abuse were more likely to suffer from allergies, chronic fatigue syndrome, hypertension and hypotension and more often experienced head injuries. Sexual abuse was associated with irritable bowel syndrome and emotional abuse with arthritis and migraine. The study has shown a link between the overall negative experiences and the total number of somatic diseases including allergies, arthritis, asthma, chronic fatigue syndrome, menstrual disturbances, fibromyalgia, head injury, hypertension, hypotension and migraine.

Having reviewed the existing body of research, we concluded that the knowledge regarding a relative impact of specific types of negative childhood experiences on clinical features of bipolar disorder remains insufficient. Therefore, the aim of this study was to examine an association between a given type of childhood adversity and clinical aspects of the illness in patients with bipolar disorder.

MATERIALS AND METHODS

Participants

Patients were recruited from the Department of Adult Psychiatry of Poznan University of Medical Sciences, Neuropsychiatric Hospital in Koscian and a psychiatric ward in Milicz Medical Center. Fifty-two patients with bipolar disorder (23 male, 29 female) were included. The patients' mean age was 47 years (SD=12) and mean illness duration was 17 years (SD=10). Consensus diagnosis for each patient was made by at least two psychiatrists, according to the International Classification of Diseases (ICD-10). Exclusion criteria covered any other psychiatric comorbidity or a serious medical condition. Forty-one patients experienced manic episodes and they were classified as bipolar disorder type I. The remaining 11 patients experienced only hypomanic episodes and were classified as bipolar disorder type II. The mean number of manic/hypo-

manic episodes was 7 (SD=5) and of depressive episodes – 10 (SD=8). None of the patients was receiving any specific psychological treatment apart from supportive psychotherapy accompanying pharmacological treatment either in hospital or as an outpatient.

Patient assessment was performed during improvement periods, measured as the patient scoring 10 or fewer points on the 17-item Hamilton Depression Rating Scale [22] and/or on the Young Mania Rating Scale [23]. At the time of assessment, all patients received pharmacological treatment with antidepressant, antipsychotic and mood-stabilizing drugs. Antidepressants were being received by 19 patients and mood stabilizers (first and second generation) by 47 patients: lithium was used most frequently, by 20 patients, valproate by 18 patients, quetiapine by 15 patients and olanzapine by 10 patients. All examinations and psychometric assessments were performed on the same day.

The study was approved by the Bioethics Committee of Poznan University of Medical Sciences, and all participants gave their informed consent after the nature of the study had been fully explained to them.

Instruments

Detailed clinical information was obtained from each patient concerning the family history of psychiatric disturbances, the course of bipolar illness (age at onset, number of episodes, number of hospitalizations, occurrence of psychotic symptoms, suicidal behavior, rapid cycling, anxiety disorders) and any somatic illnesses, including hypertension, obesity, diabetes and thyroid dysfunctions.

The Childhood Trauma Questionnaire (CTQ) [24] was then employed. It is a retrospective self-report questionnaire that investigates the history of emotional, physical and sexual abuse and emotional and physical neglect in childhood. The assessment on each scale is between 5 and 25 points, and a total CTQ is a sum of points from all the subscales. The Polish version of the CTQ used in this study was a translation prepared at the Jagiellonian University in Krakow as part of a doctoral thesis [25].

The questionnaire of negative childhood experiences was constructed by the first author of this study. It asks patients about events during their childhood concerning their close persons, such as: alcohol or drug abuse, treatment for psychiatric disorders, suicidal attempts or death by suicide, death from a serious medical illness, incarceration, separation of parents, divorce, abandonment by parents, death of mother, death of father or death of both parents.

Statistics

To assess the impact of childhood adversities on the course of bipolar illness, we used the logistic regression analysis. The risk for a given clinical feature of the illness was presented as odds ratio, with 95% confidence interval. An analysis of nominal values was performed via a chi-square test. To analyze variables expressed on the interval or nominal scale, we used Spearman rank correlation and significance was tested by Student's t-test. Statistical significance was determined as $p<0.05$. The calculations were performed using the Statistica statistical package (StatSoft-Poland, version 10).

RESULTS

Significant correlations between the type of childhood adversity and clinical features in patients with bipolar disorder are presented in Table 1.

Table 1. Significant correlations between the type of childhood adversity and clinical features in patients with bipolar disorder (n=52).

Type of childhood adversity	Total score on CTQ	Emotional abuse	Sexual abuse	Emotional neglect	Long-term separation with parents
Early onset			r=–0.364 p=0.007		
Psychotic symptoms	OR=1.07 (95% CI 1.01–1.14) p=0.033	OR=1.22 (95% CI 1.04–1.43) p=0.047		OR=1.16 (95% CI 1.02–1.32) p= 0.026	
Suicidal attempts		OR=1.14 (95% CI 1.00–1.29) p=0.047		OR=1.21 (95% CI 1.06–1.38) p=0.005	
Rapid cycling	OR=1.07 (95% CI 1.02–1.14) p=0.006	OR=1.24 (95% CI 1.07–1.43) p=0.004		OR=1.21 (95% CI 1.03–1.35) p=0.017	
Anxiety symptoms		OR=1.16 (95% CI 1.07–1.43) p=0.018		OR=1.13 (95% CI 1.01–1.28) p=0.03	Chi^2=3.99 p=0.046
Obesity					OR=4.82 (95% CI 1.39–16.78) p=0.013
Hypertension		OR=0.78 (95% CI 0.63–0.93) p=0.007			

CTQ, Childhood Trauma Questionnaire

Emotional abuse and neglect were associated with the highest number of unfavorable clinical features of bipolar disorder. Both events predicted psychotic symptoms, suicidal attempts, rapid cycling and comorbid anxiety disorders. Additionally, emotional abuse was connected with a lower risk of hypertension. The total result of the CTQ correlated with psychotic symptoms and rapid cycling. Sexual abuse was linked to earlier onset of the illness (before 25 years of age) and long-term separation with parents to comorbid anxiety disorders and obesity. The correlations did not differ in bipolar disorder type I and II, and were not connected with illness duration and the number of manic/hypomanic or depressive episodes.

Further analysis of these associations showed that some were sex-dependent. The impact of sexual abuse on early onset was significant in males (r=-0.42; p=0.044) while the connection between emotional neglect and both anxiety disorders and lower risk for hypertension was significant in females (p=0.007 and p=0.028, respectively). The association between the total result on the CTQ and psychotic symptoms and rapid cycling reached significance in males (p=0.008 and p=0.012, respectively) and the connection between emotional neglect and suicidal attempts – in females (p=0.05). Finally, the relationship between long-term separation from parents and both comorbid anxiety disorders and obesity was more pronounced in males (p=0.025 and p=0.008, respectively).

Family history of psychiatric disorders and suicidal attempts was connected with suicidal attempts in patients (p=0.041 and p=0.041, respectively). On the other hand, family history of psychiatric illness was also associated with an earlier diagnosis of the illness (p=0.045). Family history of bipolar disorder was connected with comorbid anxiety disorders (p=0.031) and family history of schizophrenia – with rapid cycling (p=0.034). Any psychiatric disorder, alcohol addiction and severe somatic illness in the family were associated with an early onset of bipolar disorder (p=0.008, p=0.003 and p=0.047, respectively).

DISCUSSION

The main contribution of our study is showing that, out of various childhood adversities, emotional abuse and neglect exerted the biggest impact on the course of bipolar disorder in our population of patients. This aligns with other studies where emotional abuse in childhood was the most important factor for the development and severity of depression in adults. Martins et al. [26], assessing 81 adult psychiatric patients, demonstrated that among childhood adversities studied emotional abuse had the strongest association with adult mood disorders and their severity, in areas such as depression, anxiety and suicidal ideation. In the meta-analysis performed by Norman et al. [27] concerning the relationship between non-sexual child maltreatment and mental and physical outcomes, the strongest predictor of depressive disorders in adults was emotional abuse (odds ratio (OR) = 3.06), more so than emotional neglect (OR=2.11) and physical abuse (OR=1.54).

According to Burchart et al. [28], emotional abuse encompasses the restriction of movement; patterns of belittling, blaming, threatening, frightening, discriminating against or ridiculing; and other non-physical forms of rejection or hostile treatment. The neglect includes a failure over time to provide for the development and well-being of the child in areas such as health, education, emotional development, nutrition, shelter and safe living conditions. It would seem that these factors are most strongly connected with reprogramming of the brain networks resulting in unfavorable clinical features of bipolar disorder [29].

Some of the associations we found between childhood adversities and clinical features of bipolar disorder were sex-dependent, and gender differences concerning the impact of child adversity have been frequently reported. Gayer-Anderson et al. [30], in a study of 202 individuals with first-onset psychosis, showed that an association between childhood adversity, social support and psychotic symptoms was evident in women but not in men. Vinkers et al. [31] found a sex-dependent effect of mineralocorticoid gene haplotypes on depression susceptibility following childhood maltreatment. Recently, Frodl et al. [32], using magnetic resonance imaging, demonstrated a significant interaction between childhood adversity (especially emotional and physical neglect) and smaller caudate volumes in (mostly) women with major depressive disorder.

In our study, sexual abuse was linked to an earlier onset of the illness. In this context, it would be interesting to summon a recent paper by Oliveira et al. [33], who demonstrated a combined effect of sexual abuse and a polymorphism of Toll-like receptors 2 (TLR2) gene, connected with the immunological system, on determining an earlier age at illness onset.

We confirmed the effect of childhood adversities on such unfavorable features of bipolar illness as psychotic symptoms, suicidal behavior and rapid cycling course, which has been known for some time [4,5,9-20]. On the other hand, the effect of negative events in childhood on comorbid anxiety symptoms, also shown in our study, is a recent discovery [34]. Pavlova et al. [35] also demonstrated that comorbid anxiety disorders are associated with greater severity of bipolar disorder.

We also found interesting associations between childhood adversities and some somatic illnesses. In our population of bipolar patients, we showed that emotional abuse in childhood was connected with a lower risk of hypertension in adults. This may not be compatible with some studies performed on a general population which demonstrated an association between childhood adversity and hypertension [36,37]. On the other hand, recent population research by Iniquez and Stankowski [38] found an inverse correlation between childhood adversity and hypertension, which corresponds with our results. Among patients with mood disorders, McIntyre et al. [39] observed higher systolic and diastolic blood pressure in those with childhood adversity, while Post et al. [21] showed an association between negative childhood experiences and both hypertension and hypotension in bipolar patients, with a stronger correlation between hypotension and childhood adversity score. Our results in a population of patients with bipolar disorder correspond to this latter finding.

Some authors also suggest that childhood adversity may be related to obesity both in the general population [40] and in patients with a mood disorder [39]. In our study, a connection was

found between obesity and long-term separation from parents. This connection has not been reported so far, and it may suggest that separation from parents may also have some impact on the occurrence of a somatic condition in bipolar patients.

One of the limitations of our study is a relatively small sample. Furthermore, the study was based entirely on retrospective and self-report data which were not verified by other informants. The heterogeneity of pharmacotherapy received by the patient sample should also be acknowledged as a limitation.

In summary, the study has shown specific associations between the type of adversity experienced in childhood and psychiatric and somatic aspects of bipolar disorder in adults. Emotional abuse and neglect have the biggest impact in this respect.

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