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Research / Araştırma

Bipolar Disorder and Suicide

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ABSTRACT

Bipolar disorder and suicide

Objective: The risk factors associated with suicidal behaviour in bipolar patients are not clear yet. We aimed to evaluate the frequency of suicide attempt, type of suicide attempt and significant clinical characteristics associated with suicide attempts.

Methods: One hundred twenty two consecutive patients, from Bipolar Disorder Unit of Çukurova University, Faculty of Medicine, Department of Psychiatry, are included in this study. "Affective Disorders Patient Registry Form" was developed by Bipolar Disorder Unit and SCID-I were used in this study to collect the data. These forms are filled in through interviews with patients and their relatives, and evaluation of inpatient files.

Results: The prevalence of suicide attempt was 19.7% in the outpatient group. Lifetime history of suicidal behavior was significantly associated with following characteristics: being a woman, depression as a first episode and indicators of severity of bipolar disorder including duration of illness, duration of untreated illness (latency), number of hospitalization, number of total mood episodes, number of depressive episodes, number of mixed episodes, positive familial psychiatric disorder history.

Conclusion: Our study showed that patients with bipolar disorder have a high rate of suicide attempt. Reduction of the duration of untreated illness, prevention of mood episodes, assessment of suicide risk during depressive and mixed episodes should be the main targets of the treatment. Detection of warning signs about suicide among patients with bipolar disorder may help to distinguish the risky group and prevent suicide.

Key words: Bipolar disorder, suicide, clinical feature

ÖZET

Bipolar bozukluk ve özkıyım

Amaç: Bipolar bozukluk hastalarında özkıyım girişimiyle ilgili risk faktörleri halen tam olarak bilinmemektedir. Çalışmamız, bu hastalarda özkıyım girişiminin sıklığı, özkıyım şekilleri ve özkıyımla ilişkili klinik özellikleri değerlendirmeyi amaçlamaktadır.

Yöntem: Çukurova Üniversitesi Tıp Fakültesi Ruh Sağlığı ve Hastalıkları Anabilim Dalı Bipolar Bozukluk Birimi'ne ayaktan başvuran 122 hasta çalışmaya alınmıştır. Duygudurum Bozukluğu Hasta Kayıt ve İzleme Formu ve DSM-IV Eksen I bozuklukları için Yapılandırılmış Klinik Görüşme Ölçeği (SCID-I) kullanılmıştır. Ölçekler, hastalarla ve hasta yakınlarıyla yapılan görüşmeler ve takip dosyaları ışığında doldurulmuştur.

Bulgular: Ayaktan izlenen bipolar bozukluk hastalarında özkıyım girişimi sıklığı %19.7 olarak saptanmıştır. Çalışmamız, özkıyım girişimiyle kadın cinsiyet, hastalığın ciddiyetini gösteren hastalık süresi, tedavisiz hastalık süresi (latans), hastaneye yatış sayısı, geçirilmiş toplam dönem sayısı, depresif dönem sayısı, karma dönem sayısı ve ailede psikiyatrik hastalık öyküsünün olması gibi klinik özellikler arasında anlamlı bir ilişki olduğunu göstermiştir.

Sonuç: Çalışmamız, bipolar bozukluk hastalarında özkıyım girişimi sıklığının yüksek olduğunu göstermiştir. Tedavisiz hastalık süresinin azaltılması, duygudurum dönemlerinin önlenmesi, depresif ve karma dönemler sırasında özkıyım riskinin değerlendirilmesi tedavinin ana hedeflerinin başında gelmelidir. Özkıyımla ilgili uyarıcı belirtilerin saptanması bipolar bozukluk hastaları arasında riskli grubun ayırt edilmesine ve özkıyımın önlenmesine yardımcı olabilir.

Anahtar kelimeler: Bipolar bozukluk, özkıyım, klinik özellik

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INTRODUCTION

Bipolar disorders is an important public health concern which effects 1-2% of the population and has a course with manic and depressive episodes. In the course of this affective disorder, suicidal ideas increase the mortality and morbidity from the early periods of the disorder. Suicide attempts and completed suicide are significantly more common in patients with bipolar disorder when compared with the general population (1,2). Previous studies have

shown that the prevalence of suicidal ideation is quite high in patients with bipolar disorder (14-59%) (3-8). More importantly, it has been established that, 25-56% of patients with bipolar disorder attempt suicide at least once in their lifetime and 10-19% of the patients die because of suicide (9).

Emergence of suicide attempt in BD is an extremely complex process. When the issue is approached from a biological stand point, it has been argued that some brain lesions might be associated with suicidal behaviors. A study using magnetic resonance as the neuroimaging method showed that periventricular hyperintensities were more common (5.4 times) in bipolar disorder patients who attempted suicide when compared with individuals without bipolar disorder (10). Studies draw attention to alterations in the seratonergic systems of the patients who attempted suicide. It has been observed that cerebrospinal fluid level of seratonin degradation product 5-Hydroxyindoleacetic acid (5-HIAA) decreased and trombocyte 5-HT2A receptor level increased (10). Decreased 5-HIAA level is supposed to be associated with aggressive suicide attempts (hanging, firearms, jumping from high places). There is a regulation impairment in the noradrenergic system similar to the impairment in the seratonergic system in suicide victims. Studies showed significant increase in frontal cortex β-adrenergic receptor binding, decreased norepinephrine neurons in locus cereleus and increased number of alfa 2 receptors. A study which investigated the relationship between dopaminergic system and suicide behavior showed decreased homovanilic acid (HVA) and dihidroxy phenil asetic acid (DOPAC) in depressive patients who are liable to suicide (11).

In addition to the clinical course of the disorder, hopelessness, impulsivity, hostility and aggression affect this complex process. Several studies have shown that previous suicidal behaviors are associated with later suicide attempts in particular (12). Completed suicide rate is 15% in patients with a prior suicide attempt while the rate is 5% in patients without such an attempt (13). Besides, gender, having more lifetime depressive episodes, depressive and mixed episodes, early age of onset, rapid cycling, substance abuse, previous suicide attempts, family history of suicide attempts, social phobia and generalized anxiety disorder are associated with suicide attempts in patients with bipolar disorder (14). Gender is the most frequently studied variable among the above. It has been found that in bipolar patients, suicide attempts are two times more common in women but completed suicide is more common in men (14-16).

Suicide attempts, which have a different prevalence in various cultures, also have cultural, economical and social aspects. While quite uncommon in some socieities and an accepted part of the culture in others, to understand the risk factors associated with suicide attempts and taking the necessary precautions is an important step to decrease mortality and morbidity of the disorder. The aim of our study was to determine the frequency of suicide attempts, methods of suicide and clinical factors associated with suicide in outpatients who were in eutymic period and who were followed-up in Çukurova University Faculty of Medicine Psychiatry Department Bipolar Disorder Unit. Thus, we compared the data of patients who attempted or did not attempt suicide in the past. Our hypothesis was that rate of suicide attempt was high in patients with bipolar disorder and that it has familial features.

METHODS

Study sample included eutymic outpatients followed-up at Çukurova University Faculty of Medicine Psychiatry Department Bipolar Disorder Unit who were 18-65 years of age, who were diagnosed with bipolar disorder (BPDI and BPDII) per DSM-IV criteria. Bipolar disorder patients who were on acute episode, who had active psychosis, who had demantia, mental retardation, Parkinson disease, degenerative disorders, neurological disorders like multiple sclerosis and systemic chronic disorders were excluded from the study. 125 patients who fulfilled the inclusion criteria were interviewed. Two patients were excluded due to mental retardation and another patient was excluded because of multiple sclerosis. Of the 122 patients who were included in the study 60 were females and 62 were males. Before inclusion to the study, detailed

information on how the data would be used was provided to the patients and written informed consents were obtained.

During data collection phase, the interviewer administered Affective Disorders Patient Recording and Follow-up Form which is used in the bipolar disorder unit and Structural Clinical Interview for DSM-IV Axis I Diagnosis (SCID-I). An almost one hour face to face interview was done with each patient and the interview was completed in a single sitting.

BPD I and BPD II diagnosis were made according to DSM-IV diagnostic criteria (17).

Data Tools

We used "Patient Recording and Follow-up Form", which was prepared at Çukurova University Faculty of Medicine Psychiatry Department Bipolar Disorder Unit. The first section involves 39 items covering name-surname of the patients, gender, age, marital status, education level, occupation, employment status, comorbid medical and psychiatric disorders, psychoactive substance use, natal and pediatric history. The patients were asked to rate their socioeconomic level as lower, middle and upper groups and their statements were recorded. Following twenty-four questions examines general clinical features of mood disorder, followed by nineteen questions which examines first episode features and that is followed by thirtyfive questions which investigates clinical course features before maintenance treatment.

Structural Clinical Interview for DSM-IV Axis I Diagnosis (SCID-I) is a semi-structured clinical interview chart applied by the interviewer in order to examine Axis I psychiatric disorders. It examines a total of 38 axis I disorders by diagnostic criteria and a total of 10 axis I diagnosis without diagnostic criteria. Two modules involve mood episodes and mood disorders, two modules examine psychotic symptoms and psychotic disorders, while substance abuse, anxiety disorders and other disorders are examined by one module for each. Sources of information are the patient, family and relatives of the patient, clinical observations and medical sources. Administration usually takes 30-60 minutes. It was adapted to Turkish by Özkürkçügil and colleagues (18) and reliability and validity of the translated form was studied.

Statistical Analysis

All statistical analysis were conducted by using SPSS for Windows 15.0 program. Chi-square test, and when necessary Fisher's exact test, was used to compare categorical variables, frequencies and rates. Mann Whitney U test was used to compare continuous variables. Statistical significance was defined as $p<0.05$.

RESULTS

Twenty four (19.6%) of the 122 patients (60 females, 62 males) attempted suicide at least once in their lifetime and 9 of these patients had more than one suicide attempt.

When sociodemographic features of all patients were taken into account, female to male ratio was very close (49.1% and 50.9%, respectively), majority of the group was married (53.3%) and were from middle socioeconomic status (79.5%).

The patients are divided into two groups based on whether they had lifetime history of suicide attempt. Sociodemographic variables were compared in Table 1. We detected that suicide attempts were significantly more common in females ($p=0.018$), on the other hand, there were no significant differences in other parameters (Table 1).

Childhood psychiatric disorders, anxiety disorders, substance use, personality disorders and physical diseases in the history of patients were examined. However, there were no significant differences in these variables between patients with or without suicide attempt (Table 2).

When the family history was investigated, it was revealed that family history of psychiatric disorders was significantly associated with suicide attempt ($p=0.041$). Highest rate was in patients with a family history of bipolar disorder (29.3%) (Table 3).

When the patients were evaluated for clinical course of the disorder, we found that risk of suicide attempt increased significantly with increasing duration of

illness, duration of latency, number of hospitalizations, total number of past episodes, number of depressive episodes and mixed episodes (p=0.027, p=0.008, p=0.045, p<0.001, p<0.001, p=0.045, respectively) (Table 4).

When assessed for type of the first episode, risk of suicide attempt was significantly lower in patients with manic first episode (p=0.016). Rate of suicide attempt was 31.7% in patients with depressive first episode and 41.7% in patients with mixed first episode (Table 5). 50% of the patients who attempted suicide made this attempt in their first episode.

Table 1: Comparison of patients with or without suicide attempt in terms of sociodemographic features

	Suicide attempt present (n=24)		No suicide attempt (n=98)			
	n	%	n	%	χ^2	p
Gender						
Female	17	28.3	43	71.7	5.61	0.02#
Male	7	11.3	55	88.7		
Marital status						
Married	16	24.6	49	75.4	2.15	0.14
Single/widowed	8	14.0	49	86.0		
Employment						
Employed	18	17.1	87	82.9	*	0.10
Unemployed	6	35.3	11	64.7		
Socioeconomic level						
Upper	2	40.0	3	60.0		
Middle	19	19.6	78	80.4	1.58	0.45
Lower	3	15.0	17	85.0		

χ^2: Chi-square Test, *Fisher Exact test is used, #p<0.05 statistically significant

Table 2: Lifetime comorbidities of patients with or without suicide attempt

	Suicide attempt present (n=24)		No suicide attempt (n=98)			
	n	%	n	%	χ^2	p
Childhood history of psychiatric disorders						
Yes	4	21.1	15	78.9	*	1.00
Psychiatric comorbidity						
Panic disorder						
Yes	3	25.0	9	75.0	*	0.70
GAD						
Yes	9	32.1	19	67.9	3.58	0.06
OCD						
Yes	2	20.0	8	80.0	*	1.00
Social phobia						
Yes	1	25.0	3	75.0	*	1.00
Specific phobia						
Yes	4	21.1	15	78.9	*	1.00
Alcohol and substance abuse and dependence						
Yes	6	15.8	32	84.2	0.53	0.47
Personality disorder						
Yes	7	30.4	16	69.6	*	0.16
Physical illness history						
Yes	6	20.0	24	80.0	0.003	0.96

χ^2: Chi-square Test, *Fisher Exact test is used, GAD: Generalized anxiety disorder, OCD: Obsessive compulsive disorder

Table 3: Family history of patients with or without suicide attempt

		Suicide attempt present (n=24)		No suicide attempt (n=98)			
		n	%	n	%	χ^2	p
Family history of psychiatric disorder	Yes	20	25.0	60	75.0	4.17	0.04#
Family history of depression	Yes	8	23.5	26	76.5	0.44	0.50
Family history of BPD	Yes	12	29.3	29	70.7	3.56	0.06
Family history of schizophrenia	Yes	4	26.7	11	73.3	*	0.49
Family history of schizoaffective disorder	Yes	1	20.0	4	80.0	*	1.00
Family history of OCD	Yes	1	11.1	8	88.9	*	0.69
Family history of panic disorder	Yes	1	8.3	11	91.7	*	0.46
Family history of GAD	Yes	3	18.8	13	81.3	*	1.00
Family history of substance abuse	Yes	1	11.1	8	88.9	*	0.69
Family history of suicide attempt	Yes	6	28.6	15	71.4	*	0.36

χ^2: Chi-square Test, *Fisher Exact test is used, #p<0.05 statistically significant, BPD: Bipolar disorder, GAD: Generalized anxiety disorder, OCD: Obsessive compulsive disorder

Table 4: General clinical features of patients with or without suicide attempt

	Suicide attempt present (n=24)		No suicide attempt (n=98)		Mann	
	Mean	SD	Mean	SD	Whitney U	p
Age (years)	37.75	12.80	35.11	11.51	1034.0	0.36
Education (years)	9.91	3.76	11.10	3.19	969.5	0.14
Age of onset of disorder	23.54	9.93	24.98	9.40	993.0	0.24
Duration of illness (years)	14.68	9.10	10.46	7.86	832.0	0.03#
Duration of illness without treatment (Latency) (years)	6.39	6.14	3.80	5.44	767.5	0.01#
Number of hospitalizations	2.58	3.24	1.33	1.81	877.0	0.04#
Number of total past episodes	8.20	5.03	5.01	3.92	647.5	<0.001
Number of depressive episodes	3.66	3.44	0.99	1.17	351.5	<0.001
Number of manic episodes	2.50	3.55	2.14	2.06	1077.0	0.51
Number of mixed episodes	0.41	0.71	0.20	0.64	979.5	0.04#

SD: Standard Deviation, #p<0.05 statistically significant

Table 5: Comparison of patients with or without suicide attempt in terms of the first episode type

	Suicide attempt present (n=24)		No suicide attempt (n=98)			
	n	%	n	%	χ^2	p
Type of first episode*						
Depression	13	31.7	28	68.3	8.28	0.02#
Mania	6	11.3	47	88.7		
Mixed	5	41.7	7	58.3		
Total	24	22.6	82	77.4		

χ^2: Chi-square Test, *patients with first episode hypomania are not included in the analysis, #p<0.05 statistically significant

When the episode features were compared, seasonal and psychotic features of the episode were not significantly associated with suicide attempt (p=0.129, p=0.120, respectively).

When the suicide methods were examined, the most common method was intoxication (62.5%), followed by jumping from high places (16.6%), hanging (8.3%) and other (8.3%) (suffocation, burning, etc.) methods.

DISCUSSION

Our study is important in terms of showing that some clinical and demographical features were associated with suicide attempts in bipolar disorder. These include female gender, duration of illness, duration of illness without treatment, total number of past episodes, number of depressive and mixed episodes

and family history of psychiatric disorders.

When evaluated from gender point, we found that women attempted suicide significantly more than men (28.3% vs 11.3%). Suicide-gender relationship has been studied extensively in the literature. Suicide risk is 4 times higher in women with bipolar disorder than men with bipolar disorder (14). In a previous study conducted in our unit, we reported that 26% of the female patients with bipolar disorder and 12% of the male patients with bipolar disorder attempted suicide (19). In a prospective study investigating the relationship between gender and suicide attempts, Oquendo and associates (20) showed that risk of future suicide attempts increased 6 times in women and 3 times in men with previous history of suicide attempts. In our study, of 24 patients with suicide attempts 9 had repetitive attempts. History of suicide attempt is defined as a risk factor in the literature, too (21).

A previous study showed that conditions such as substance use, family history of suicide attempt, smoking, borderline personality disorder, early parent loss are more common in males and that might increase risk of suicide attempt. This study was important for indicating that there is a complex relationship between gender and suicide attempt and that other factors related with gender may also affect the process (9). Comorbidity of alcohol and substance abuse and bipolar disorder is accepted as an important risk factor (14,22). However, we did not find any significant difference in this point between patients who attempted or did not attempt suicide. Our data indicated that only patients with lifetime generalized anxiety disorder has a higher risk of attempted suicide. Previous studies reported that comorbid social phobia was also asociated with suicide (14,21,23). However, there are other studies which did not show any association between anxiety disorders and suicide attempts (24).

In our study we found a strong association between suicide attempt and family history of psychiatric disorder. While, as expected, suicide attempt was associated with family history of bipolar disorder, family history of depressive disorder and suicide attempt were not related with suicidal behaviors. This is in conflict with the suggestion previously reported in the literature that family history of suicide is a risk factor (21,25). In a study investigating the relationship between family history and suicide, it is suggested that both genetic and environmental factors are important in the emergence of suicide (26).

In our study we observed that risk of suicide attempt is higher when the time to diagnosis and consequently to treatment was longer. Besides, our results indicate that 50% of the patients who attempted suicide did so during the first episode. A previous study reported similar results. This study showed that 60% of the patients who attempted suicide during depressive episode made their attempt in the first episode (27). More frequent suicide attempts in patients who had depressive first episode seems to be a part of the process. This is consistent with previous studies (28-30). Since patients with depressive first episode less commonly seek treatment and rate of having bipolar disorder diagnosis is lower in this group, possible risk of suicide attempt is overlooked, as well (31). Another important result of our study was that risk of suicide attempt increases as the duration of illness and total number of episodes increase. We observed that suicide risk increased particularly with higher number of depressive episodes. Chronic course of the disorder, possible detrimental effects, functional impairment and, by the nature of the disorder, hopelessness and anhedonia during the depressive episode are important in terms of suicidal behaviors. Results of previous studies also support the notion that higher number of depressive episodes increase risk of suicide (14,32). Implementing an effective maintenance treatment during this time may contribute significantly to lower morbidity and mortality and to increase quality of life of the patients (33).

Previous studies indicated that sexual and physical abuse, particularly during childhood, were associated with course of the disorder, suicidal ideations and attempts in patients with bipolar disorder (34,35). We did not find any association between childhood history of psychiatric disorders and trauma (enuresis, conduct disorder, attention deficit hyperactivity disorder, sexual, physical and emotional abuse) and suicide attempt. This might be due to small sample size. For instance,

only one subject in the study declared childhood sexual abuse.

Finding the rate of suicide attempt 19.7% in outpatients with bipolar disorder was expected. Lifetime suicide prevalence is established as 13.1% in Korean patients with bipolar disorder (36). These rates are lower than the suicide rates (25-56%) in patients with bipolar disorder in previous studies (9). This can be due to unaccepted nature of suicide attempt in our society, anxiety about stigmatization, protective effects of religious beliefs, sufficient psychosocial support and psychoeducation. When the relationship between subtypes of bipolar disorder and suicide was investigated, suicide attempt was more common in patients with bipolar I disorder (n=19) compared with patients with bipolar II disorder (n=5). There are contradictory studies in the literature on this subject. Some studies argued that suicide risk was higher in bipolar II type (30,36). Our results showed that the most common suicide method was intoxication. In a study which investigated the relationship of suicide method and type of first episode, results indicated that patients with manic first episode used lethal methods (hanging, firearms, jumping from high places) more frequently (30). We did not make a similar investigation in our study since the sample size was small.

An important limitation of the study is that since it is conducted in a university hospital which is a tertiary health care center, results may not be generalized to population and other patients. Patients who are reffered and admitted to our clinic are mainly treatment resistant, who had multiple episodes and diagnosed lately. Another limitation is small sample size. Subjects with similar features could not be taken together due to random selection of the subjects.

CONCLUSION

Suicide attempt in patients with bipolar disorder is a serious public health problem. Most important factors are early diagnosis and treatment. It is possible to decrease mortality and morbidity of bipolar disorder by detection of this dramatical risk and taking precautions. Our study showed that frequency of suicide attempt is quite high. Therefore, the results emphasize the importance of ealy recognition and effective treatment. We think that decreasing the period without treatment and preventing mood episodes must be our essential targets. Particularly during mixed and depressive episodes, evaluating the risk of suicide, investigating bipolarity and informing the patients and their families are important. Therefore, finding cautionary symptoms will be helpful to develop new terapeutic approaches.

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