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One-Year Follow-Up of Patients with a Diagnosis of First Episode Psychosis

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ABSTRACT

Introduction: Early diagnosis of symptoms related to psychotic disorders causes hyper responsiveness, recurrence reduction and quality of life improvement. The aim of this study was one-year follow-up of the clinical course and outcomes of hospitalized patients with first episode psychotic disorders and detection of factors affecting consequences. **Methods:** This longitudinal descriptive study was conducted during 2012 to 2013 on hospitalized patients at Zare Hospital in Sari, Iran, with any psychotic symptoms and with diagnosis of first episode psychosis. The severity of psychotic symptoms was assessed via PANSS scale (Positive and Negative Syndrome Scale) and the global functioning through Global Assessment of Functioning (GAF) scale on admission, discharge day, 6 and 12 months later. Data were analyzed using ANOVA and t-test in SPSS 20 software. **Results:** Thirty two patients had complete follow-up (25 men and 7 women) (mean age of 29.37 ± 8.02). Discharge diagnosis was as 8 (25%) bipolar disorder with psychotic features, 8 (25%) not otherwise specified (NOS), 7 (22%) schizophrenia forum disorder, 7 (22%) psychotic disorder caused by abuse materials, 2 (6%) major depressive disorder with psychotic features. There was drug abuse in half of the patients. The drug abuse in the patients had a positive relationship with the recurrence of psychotic symptoms (p=0.04). **Conclusion:** A significant percentage of patients with first episode psychosis (50%) within 12 months after the primary hospitalization experienced recurrence of psychotic symptoms. Likewise, global functioning had no major improvement in the patients. It seems essential the necessity of comprehensive services after discharge, especially in patients with drug abuse, and further support of social service centers.

Keywords: Psychotic Disorders, Follow-Up Studies, Recurrence, Relapse.

1. INTRODUCTION

The psychotic disorders are a group of mental impairment, in which thoughts, emotional response, ability to understand reality, and making communication with others are damaged seriously (1). The psychotic disorders are particularly important either in terms of individual and family problems or in social and economic consequences (2).

Considerable delays could be observed between the onset of symptoms and diagnosis and proper treatment of psychotic disorders. According to surveys, many patients with psychotic disorders are not diagnosed within one or two years of disease onset (3). Early diagnosis of symptoms related to psychotic disorders causes hyper responsiveness, reduced recurrence and improved quality of life (4). Even with timely diagnosis and treatment, by 80% of patients experience recurrence within the first 5 years of disease (5). Cessation of treatment is the leading cause of recurrence, exacerbating the recurrence rate up to five-fold more (6). That is why, first 5 years of disease onset is considered critical period and the patients need to be given special attention at this time. It has been found that follow-up of treatment and risk factors may improve prognosis in this period (7).

There is little information regarding family history, social status and family functioning before the onset of illness and their long-term consequences (8). Some studies have reported that the incidence of this disorder suddenly with the onset less than two weeks is associated with relatively good consequences (9, 10). However, few studies have been done about the onset of symptoms as subacute (between 2 and 4 weeks) and over four weeks; the outcomes are uncertain. On the other hand, some believe that early diagnosis and treatment can change the course of the disease. Some others have also found associations between delay in treatment and poorer outcomes of the disease (11), and have linked long-term prelude to

a further delay in treatment and adverse consequences (11).

Currently, several programs have been designed and implemented for early diagnosis and appropriate treatment and follow-up of psychotic disorders in diverse countries such as Australia, Britain, Canada and Denmark (12). Obviously, these investigations provide basic information to enable more accurate estimate of psychotic disorders. Few studies have been conducted in Iran on the consequences of hospitalized patients with first episode psychosis; related factors affecting have not been recognized and the exact information is unavailable concerning the long-term course and their recurrence rate. The aim of the present study was one-year follow-up of the clinical course and outcomes of patients with first episode psychotic disorders hospitalized at Zare Hospital in Sari, Iran, during 2012 to 2013 and detection of factors affecting their consequences such as family history of psychiatric disorders, drug abuse and associated variables.

2. MATERIALS AND METHODS
Patients and study design
This longitudinal descriptive study was conducted on hospitalized patients at Zare Hospital in Sari, Iran, in psychiatric wards. Samples were obtained from patients consecutively during 2012 to 2013. Inclusion criteria in addition to aforementioned items were patients older than 18 years residing in Mazandaran province and referring with first episode psychosis, the onset of symptoms less than 6 months, no history of referral to a psychiatric center and taking antipsychotic medication before six recent months with the advice of a psychiatrist, and existence of at least one psychotic symptoms (hallucinations, delusions, disorganized speech, disorganized behavior and catatonia) in the preliminary assessment as well as delirium. Exclusion criteria included psychosis caused by organic disease diagnosed during the initial assessment and cases suspected of mental retardation based on history taking from relatives.

The patients hospitalized at Zare Hospital having any psychotic symptoms, including hallucinations, delusions, disorganized behavior, catatonia and disorganized speech, if the latter problem was the first event of illness, were enrolled in the study according to inclusion and exclusion criteria. Thus, written informed consent was obtained from first-degree relative of the patient after explaining the purpose and methodology of the study. Demographic characteristics including age, gender, residence (urban/rural), marital status, educational level, occupational status the patient and history of psychiatric disorders in family were recorded in demographic questionnaire. History and type of drug abuse, if any, were recorded in the information form. Onset time of initial symptoms was also asked from patients and their relatives and was recorded as follows: acute onset (less than 2 weeks), subacute onset (between 2 and 4 weeks) and gradual onset (more than 4 weeks) (11). On admission and discharge, a psychiatrist assessed the positive, negative and general signs of psychotic disorders using PANSS (Positive and Negative Syndrome Scale) (13) and recorded in the information form. The PANSS scale has three components: positive component with 7 items, negative component with 7 items and general component with 16 items. Each item is scored from 1 (the mildest symptoms) to 7 (the most severe symptoms). The PANSS is

used widely in patients with psychotic disorders. Change in the index (at least 20% reduction in symptoms) is recruited to determine the level of improvement in psychotic symptoms (13). Cronbach's alpha was 0.77 for the scale and its validity has accepted using factor analysis (14, 15). After stabilizing the patient's condition, a psychiatrist (project executive manager) diagnosed the disease in each individual based on the Structured Clinical Interview of DSM-IV-TR (Diagnostic and statistical manual of mental disorders) (SCID I & II), with validity of the Persian version previously determined (16), and was recorded in the data collection form (17). The psychiatrist evaluated comprehensive performance assessment of patients based on the GAF (Global assessment of functioning) scale that takes into account the cognitive and occupational functioning on a hypothetical continuum of mental health-illness and is coded from 0 (fully impaired functioning) to 100 (superior functioning) (18). In addition, the final diagnosis of disease at discharge was also recorded for each patient. All patients at 6 months and 12 months later were visited again in the psychiatric clinic at Zare Hospital. The psychiatrist performed again clinical interview based on DSM-IV-TR (SCID I & II) and the final diagnosis was recorded in the information form of each individual. Likewise, the positive, negative and general symptoms of psychotic disorders using PANSS scale and global functioning using GAF scale were analyzed and recorded again. In addition, recurrence of symptoms during follow-up and hospitalization in psychiatric wards, or referral to non-psychiatric centers due to psychotic symptoms at

Variables		
Age (year)	29.37±8.03	
Onset time of symptoms (day)	57.12±47.57	
Duration of hospitalization (day)	22.37±12.67	
Gender	Male	25(78.1%)
	Female	7 (21.9%)
Residence	Urban	17 (53.1%)
	Rural	15(46.9%)
Marital status	Single	21(65.6%)
	Married	11(34.4%)
Educational level	Primary school	4(12.5%)
	Secondary	9(28.1%)
	High school	12(37.5%)
	University education	7(21.9%)
Occupational status	Unemployed	15(46.9%)
	Full-time	9(28.1%)
	Part-time	2(6.3%)
	Housekeeper	2(6.3%)
	Retiree	1(3.1%)
	Studying	3(9.4%)
Family history	Yes	16(50%)
	No	16(50%)
Drug Abuse	Yes	16(50%)
	No	16(50%)
First referring center	General Practitioner	14(43.85%)
	Psychiatrist	16(50%)
	Other (traditional healers)	2(6.3%)

Table 1. Demographic characteristics of the patients with first episode psychosis during 2012 to 2013

Variables	Time				p
	Admission	Discharge	6 months after discharge	12 months after discharge	
General signs of psychosis	41.53±5.62	29.90±6.59	35.12±6.08	36.53±6.93	‹0.001
Positive signs of psychosis	31.00±4.21	13.46±5.96	14.87±6.96	16.40±9.91	‹0.001
Negative signs of psychosis	15.75±4.55	12.15±4.73	16.21±5.97	17.93±7.63	‹0.001
Global Assessment of Functioning (GAF)	13.18±6.08	46.00±9.83	37.25±14.53	37.87±14.46	‹0.001

Table 2. Status of psychotic symptoms and global functioning of the patients with first episode psychosis on admission, discharge, 6 and 12 months follow-up during 2012 to 2013

Disorders	Discharge		12-month follow-up	
	No	%	No	%
Bipolar disorder with psychotic symptoms	8	25	10	31.3
Major depressive disorder with psychotic symptoms	2	6	3	9.2
Schizophrenia forum	7	22	9	28.2
Psychotic disorder due to drug abuse	7	22	9	28.2
Not Otherwise Specified (NOS)	8	25	1	3.1

Table 3. The status of psychotic disorders in patients with first episode psychosis at discharge and 12-month follow-up during 2012 to 2013

Figure 1. The trend of changes in GAF, general, positive, and negative signs in follow-up of patients with first episode psychosis

follow-up period was asked by the psychiatrist in person in the psychiatric clinic at Zare Hospital, and was recorded in the corresponding form.

Statistical analysis

The obtained data were inserted into SPSS version 20 software. Quantitative variables were expressed as mean ± SD and qualitative variables as frequency tables (ratio/percentage). Data were analyzed using repeated measure ANOVA. ANOVA was employed to study the relationship between educational level and occupation with PANSS scores, Pearson correlation coefficient to detect the relationship between age and PANSS scores, and t-test to determine the relationship between family history and marital status with PANSS scores. P-value<0.05 was considered as statistically significant level.

3. RESULTS

In total, 38 patients with first episode psychosis during 2012 to 2013 admitted to the psychiatric clinic at Zare Hospital in Sari were enrolled in the study. Six patients were excluded from the study for various reasons, such as unwillingness to cooperate in the project, early discharge with personal satisfaction and failure to response to repeated calls. Thirty-two patients had complete follow-up, including 25 men (78.1%) and 7 women (21.9%). Demographic characteristics of the patients with first episode psychosis are shown in Table 1.

Half of the patients had a history of drug abuse, including cigarette, alcohol, methamphetamine, opium, hashish, crack and methadone. The mean onset time of symptoms and referral to psychiatrist was 57.12 ± 47.57 days (minimum 2 days and maximum 6 months). Five patients (15.6%) had acute onset, 5 patients (15.65%) subacute onset and 22 patients (68.8%) gradual onset. The GAF score, and positive, negative and general symptoms of psychotic disorders using PANSS on admission, discharge day, 6 and 12 months later were examined; the results are shown in Table 2 and Figure 1.

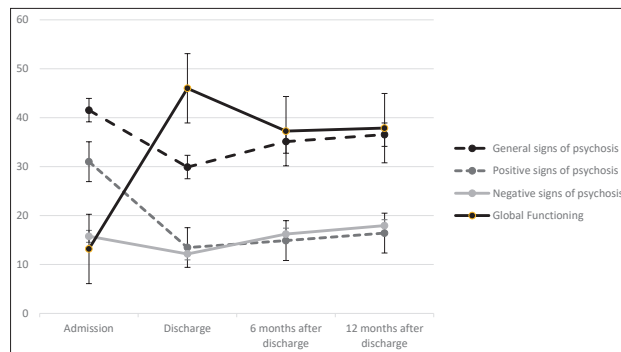The mean duration of hospitalization was 22.37±12.67 days

(at least 3 days and maximum 63 days) in these patients. The recurrence rate of psychotic symptoms after discharge was 50% in this study, but the cases leading to readmission in psychiatric wards was 21.9% (n=7).

Of these, six patients once and one case twice at 12 months follow-up after discharge required to readmission due to recurrence of symptoms. Seven patients (21.7%) after discharge and during follow-up following recurrence of psychotic symptoms were admitted through the family in addiction treatment camp. The status of psychotic disorders in patients with first episode psychosis at discharge and 12-month follow-up has been shown in Table 3.

In the analysis of data related to the patients, drug abuse was significantly associated with recurrence of symptoms in patients; so that individuals with drug abuse showed higher recurrence rate (68.8% versus 31.3%, p=0.04), while drug abuse had no significant relationship with readmission rate in psychiatric ward (31.3% versus 25%, p=0.5). The drug abuse was significantly correlated with admission GAF so that people with drug abuse had lower admission GAF (p=0.007). There was no significant relationship between drug abuse and GAF at discharge, 6 months and 12 months later (p> 0.05). Repeated measures ANOVA showed no significant correlation between drug abuse and general, positive, and negative psychotic signs on admission, discharge and next follow-ups (p> 0.05).

In examining demographic characteristics such as gender, residence, education level, occupational status, marital status, family history and first referring center, these factors were not significantly associated with other findings, such as the final diagnosis, onset time of symptoms, duration of hospitalization, recurrence rate and readmission (p> 0.05). The GAF scale, general, positive, and negative psychotic signs on admission and discharge and follow-up at 6 and 12 months later were not correlated with demographic characteristics (p> 0.05). The recurrence rate was not significantly

associated with GAF score and general, positive, and negative psychotic signs on admission, discharge and follow-up at 6 and 12 months later (p> 0.05). The readmission rate in psychiatric ward had also no significantly association with mentioned parameters. There was also no significantly relationship among family history of psychotic disorders with recurrence rate and readmission, as well as GAF score and general, positive, and negative psychotic signs on admission, discharge and next follow-ups (p> 0.05).

4. DISCUSSION

The consequences of psychiatric disorders can be investigated from various aspects such as severity of symptoms, recurrence, functioning and quality of life. Concerning psychotic disorders, prospective study is very important in the patients with first episode psychosis. In the present study, the patients with first episode psychosis were assessed for a year and the rate of drug abuse, recurrence and readmission was investigated in them. The findings of the present study showed that 50 percent of patients had a history of drug abuse, indicating a significant positive correlation with recurrence rate. In addition, the history of drug abuse was significantly associated with lower admission GAF score though there was not associated with severity of psychotic symptoms.

The recurrence rate, especially cases resulting in hospitalization, is one of the most important indices of assessing consequences of patients with first episode psychosis (19). In the present study, the recurrence rate of psychotic symptoms was 50% and causes of readmission in psychiatric ward was 21.9%, while in the study between 2006 and 2008 conducted in Tehran Roozbeh Hospital in Iran, recurrence rate and readmission was reported 40% that is a significant rate (2). The researchers stated the need for effective measures to follow up on recurrence and rehabilitation due to the high recurrence rate of psychotic disorders leading to hospitalization and the lack of significant change in the function and quality of life of patients during follow-up. In another 5-year study in America, the recurrence rate was reported by 80 percent (5) though this rate was related to any recurrence regardless of the need for hospitalization. In another study in Turkey during the one-year follow-up, the recurrence rate was only 12.1% (15). In a systematic review, the recurrence rate and readmission were reported on average 44.9% (16). The recurrence rate and readmission depend on several factors, such as the final diagnosis of the disorder (mood or non-mood) and during the study period (if the recurrence rate is shorter than two years, it will be reported fewer) (16).

In the present study, despite the proximity of recurrence rate with the results of a systematic review of studies mentioned above, the readmission in psychiatric ward shows lower percentage, which is justified by cases admitted in addiction treatment camps (21.7%) that are not defined possibly in some of the country's health system. Studies have shown that the recurrence rate in adolescents with first episode psychosis over two years was 64.5 percent (20). According to various studies, access rate to the therapist, adherence to treatment and symptoms of depression are effective in recurrence rate (21). The adolescents were not investigated in the current study, and lack of attention to variables of access rate to the therapist, adherence to treatment and symptoms of depression are the limitations of this study. However, other factors were examined such as gender, age, education level, onset time of symptoms marital status, family history and duration of hospitalization showed no significant differences for the recurrence rate. However, the history of drug abuse was significantly related to an increase in the recurrence rate, so that people with a history of drug abuse had higher recurrence rate that was not associated with higher rates of readmission in psychiatric ward.

In our study, the severity of psychotic symptoms at discharge was significantly better in terms of global functioning and psychotic symptoms. However, in one-year follow-up, positive and negative psychotic symptoms had been higher based on the PANSS but it was better compared to the time before the initial stay in hospital. Global functioning based on the GAF also has improved at discharge. Discharge diagnosis of patients had changed at follow-up of 15 patients. Seven patients diagnosed with schizophrenia forum disorder have changed toward schizophrenia. Moreover, of eight patients with primary diagnosis of NOS, two patients have changed to bipolar disorder with psychotic symptoms, two patients to schizophrenia, one patient to major depressive disorder with psychotic symptoms and two cases to psychotic disorder due to drug abuse. The most common final diagnosis during 12-month follow-up in the present study was bipolar disorder with psychotic symptoms (31.3%). Other diagnoses included schizophrenia (28.2%), psychotic disorder due to drug abuse (28.2%), major depressive disorder with psychotic symptoms (9.2%) and NOS (3.1%). Psychotic disorders caused by drug abuse also in 28.2% of patients were considered as final diagnosis. Also, 21.7% (n=7) of patients during follow-up after the recurrence of symptoms due to the history of drug abuse had been referred through the family to the addiction treatment camp, which not only did not help to treatment but also based on observations of the current study led to the loss of trust of the patient to family and lack of cooperation for appropriate treatment.

A significant percentage of patients with first episode psychosis (50%) within 12 months after the first hospitalization experienced the recurrence psychotic symptoms. In addition, the global functioning of the patients had no significant improvement, indicating the need for comprehensive services after discharge, especially in patients with drug abuse, and further support of social service centers.

- Conflict of interest. The authors have no conflict of interest to declare.

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