

Long Term Follow-Up of Patients with Postpartum Psychosis

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Abstract

Objective: This research compared the demographic features, presence of confusion, and long-term follow-up results of women with postpartum psychosis to control subjects.

Method: The study included 23 patients with symptoms that emerged in the six-month period after delivery who were followed-up between 1998 and 2006. The control group consisted of 25 age- and education level-matched female patients experiencing their first psychotic episode. Data were collected with a sociodemographic questionnaire, the Clinical Global Impression Scale, and the Delirium Rating Scale. Final diagnoses were made according to DSM-IV.

Results: Among the postpartum women, 73.9% developed psychosis during their first parturition. The postpartum psychosis and control groups were followed-up for 4.00 ± 1.62 (range: 2-6) and 3.96 ± 1.24 (range: 2-6) years, respectively. During the follow-up period, 21.7% of the postpartum patients developed a mood disorder, and 77.9% developed schizophrenia and other psychotic disorders. Among those in the control group, 32.0% were diagnosed with a mood disorder and 68.0% with schizophrenia and other psychotic disorders. The distribution of final diagnoses in the 2 groups were similar. Patients with postpartum psychosis experienced more confusion than the control subjects. During the follow-up period, 65.2% of the patients with postpartum psychosis and 72% of the control patients had recurrence.

Conclusion: The course of postpartum psychosis was similar to DSM-IV diagnostic criteria, except for the presence of confusion. During the follow-up period, most of the patients in both groups were diagnosed with schizophrenia and other psychotic disorders. This result indicated that there is no need for other diagnostic criteria for postpartum psychosis other than those presently contained in DSM-IV.

Key Words: Postpartum mental disorders, postpartum depression, postpartum psychosis, follow-up study, confusion

INTRODUCTION

The postpartum period is considered to be a time when women are at risk for the development of psychiatric disorders. Psychiatric symptoms and disorders are seen in 70%-85% of women during this period (Altshuler et al., 1998). These psychiatric disorders are classified as postpartum blues, non-psychotic postpartum depression, and postpartum psychosis (Nonacs and Cohen, 1998; Brockington, 2004; Halbreich, 2005). Research has shown that the prevalence of postpartum psychosis is only 0.1%-0.2% (Kendell et al., 1987).

In psychiatric diagnostic systems (DSM and ICD), psychiatric disorders in the postpartum period are not classified as a separate clinical diagnosis. The concept of

postpartum in DSM-IV is considered as an onset identifier for brief psychotic disorder, bipolar disorder, and major depressive disorder when the onset is in 4 weeks after parturition. Postpartum psychosis is categorized under disorders not otherwise specified and the symptom distribution is not defined (APA, 1994; WHO, 1992).

According to DSM-IV, psychiatric symptoms that start in 4 weeks after parturition are evaluated as postpartum psychiatric symptoms (APA, 1994). Many clinicians consider the 6-12 months after parturition as the postpartum period (Nonacs and Cohen, 1998; O'Hara, 1984; Danacı et al., 2000). Kendell et al. (1987) reported a significant increase in psychiatric referrals twithin he first 3 months after parturition.

There are few studies on the symptoms of postpartum psychiatric disorders. Oosthuizen et al. (1995) reported that although there were no significant differences in terms of fluctuation of consciousness, orientation disorder, and changes in concentration between controls and patients with postpartum psychosis, however, perplexity was significantly higher among the patients with postpartum psychosis. In contrast to these findings, other studies report that cognitive disorder (Wisner et al., 1994) and confusion (Brockington et al., 1981, Kirpınar et al., 1999) are significantly higher among patients with postpartum psychosis. Some authors propose that phenomenologically, postpartum psychiatric disorders are different from other psychiatric disorders (Kandrmaz et al., 1979, Hays and Douglas, 1984; Dean and Kendell, 1981); some think that the only difference is the time of onset (Platz and Kendall, 1988). Although in Western countries the most frequent diagnoses are mood disorders during the long-term follow-up of postpartum psychiatric disorders (Brockington et al., 1981), in Turkey the most frequent diagnoses are schizophrenic disorders (Kirpınar et al., 1999).

Are postpartum psychiatric disorders a separate diagnostic category, or are they a sudden exacerbation of mood disorders or schizophrenic disorders? This issue remains contentious in the psychiatric literature. The only study to address this issue in Turkey was conducted by Kirpınar et al. (1999) In this study we aimed to compare the demographic features, presence of confusion, and long-term follow-up results of women with postpartum psychosis and control subjects.

METHODS

Study Groups

The present study included 46 patients with psychiatric symptoms that emerged during the first 6 months of parturition. The patients were followed-up between 1998 and 2006 in our clinic. The last patient was included into the study in 2004 and patient follow-ups continued until 2006. Physical and mental disorder history, any medication that could lead to psychiatric disorders, acute organic brain syndrome, presence of a physical illness (diabetes mellitus, anemia, thyroid function disorder, and hypertension), and abnormal laboratory findings were the exclusion criteria. In all, 36 patients were followed-up until the end of the study. Among the 9 patients who were not followed-up throughout the entire study period; 3 could not come to appointments due to financial reasons as they resided outside Ankara.

Three other patients were cared for at other hospitals after discharge and researchers were unable to contact another 2 of the patients. One patient had a history of hypertension and was excluded.

In the initial assessment of the 36 patients with postpartum psychiatric symptoms, 23 were diagnosed with postpartum psychosis and 13 with postpartum depression. The 23 patients diagnosed with postpartum psychosis were included in the study and 25 age- and education level-matched female patients who were experiencing their first psychotic episode, independent of parturition, composed the control group.

Procedure

During patient follow-up, clinical records were kept by the same psychiatric specialist (CK) and 2 research assistants (AK, SGY) by interviewing patients and their first-degree relatives. A sociodemographics questionnaire developed for this study was used. Patients were followed-up every 15 days for the first 2 months after discharge, then every 3 months. The postpartum period was defined as the 6 months following parturition, based on Pfuhlmann et al. (1999). Informed consent of the relatives of all the patients was obtained. The onset of clinical symptoms was determined based on the anamnesis taken from the families and the patients. As the psychiatric diagnostic systems do not include postpartum psychiatric disorders, the initial diagnoses were postpartum psychosis and postpartum depression. The final diagnoses during the follow-up were based on DSM-IV diagnostic criteria.

Tools

The Sociodemographics Questionnaire

This form was used in order to gather information on patient, such as; age, level of education, duration of hospitalization, number of symptom-free days, number of deliveries, the day postpartum symptoms began, family history of psychiatric disorders, history of psychiatric disorder, type of parturition, gender of the baby, the duration of follow-up, new parturition during the follow-up period, and recurrence of the psychiatric disorder during the follow-up period.

The Delirium Rating Scale (DRS)

DRS is a 10-item scale rated by the researcher. DRS includes the following subscales: psychomotor functions, orientation, attention, memory, perception, thought process, thought content, disruption in the sleep cycle,

Table I. Characteristics of the postpartum psychosis patients.

Postpartum psychosis (n= 23)	Postpartum psychosis (n= 23)
Onset of postpartum psychiatric disorder	
First parturition	(17) 73.9%
Second and subsequent deliveries	(6) 26.0%
Vaginal	(19) 82.6 % (20)
Caesarean section	(4) 17.4 %
Gender of the baby	
Girl	(11) 47.8 %
Boy	(12) 52.2%
The day of onset of symptoms	17.77 ± 25.83 (2-115) days
Another parturition	(11) 47.8%

mood and other symptom fluctuations during the day. Each item is rated between 0 and 3 on a 4-point Likert-type scale. DRS was developed by Aydemir et al. (1998).

There are no specific diagnostic scales in Turkish that assess confusion; therefore DRS was used for this aim. Participants who scored ≥ 2 on the attention, orientation, and memory items of this scale were considered to be experiencing confusion.

Clinical Global Impression Scale (CGI)

To evaluate the severity of mental disorder and the efficacy of treatment, the severity (CGI-S) and global remission (CGI-R) subscales of CGI were used. The severity of the disorder was detected with CGI-S. The severity values are between 1 (normal, not ill) and 7 (severely ill). General remission of the psychiatric disorder was determined with CGI-R. The remission values are between 1 (high remission) and 7 (no remission and exacerbation) (Guy, 1976). The mean length of of period that symptoms get started to decrease was determined with the CGI-R ratings of high remission (1) and very good remission (2) of the patients on the 15th and 30th days of the disorder. During the sixth month of the study, patients were evaluated in terms of their treatment response with CGI-R as 1 (full remission) and (2-3) partial remission. CGI-S was administered at the time of hospitalization, every 15 days during the first 2 months following discharge, and at the end of the sixth month to measure treatment response.

Statistical Analyses

Statistical analyses were made with SPSS v.13.0. As the distribution of the continuous variables was not normal, the Mann-Whitney U test was used. Chi-square

and Fisher's exact tests were used for the analyses of the categorical variables. The level of statistical significance was accepted as $P \leq 0.05$.

FINDINGS

In the assessment of the 36 patients hospitalized for the development of a postpartum mental disorder, 63.9% (n= 23) were diagnosed with postpartum psychosis and 36.1% (n= 13) with postpartum depression.

Among the postpartum psychosis patients, 73.9% (n = 17) developed psychosis after their first parturition and 26.0% (n= 6) after their second and subsequent parturitions [13.0% (n= 3) after their second, 8.7% (n= 2) after their third, and 4.3% (n = 1) after their fourth parturition]. Of all the deliveries, 82.6% (n= 19) were vaginal and 17.4% (n= 4) were with caesarean section, 47.8% of the babies were girls, and 52.2% were boys. Sixteen percent of control group and, 26.1% (n= 6) of the post partum patients had a family history of schizophrenia and other psychotic disorders, or mood disorders. None of the patients in either groups had a family history of postpartum psychiatric disorder. The difference between the 2 groups in frequency of family history of mental disorder was not significant (Table I).

The diagnoses were made according to the DSM-IV (Table I). During follow-up the diagnoses in the postpartum psychosis patients were as follows: schizophrenia 26.1% (n= 6), schizophreniform disorder 17.4% (n= 4), schizoaffective disorder 17.4% (n= 4), brief psychotic disorder 17.4% (n= 4), and bipolar disorder 21.7% (n= 5). The final diagnoses in the control group were schizophrenia 36% (n= 9), schizophreniform disorder 4% (n = 1), schizoaffective disorder 4% (n= 1), brief psychotic disorder 24% (n= 6), and bipolar disorder 32% (n= 8).

Table II. DSM-IV diagnoses during long-term follow-up.

	Postpartum psychosis group	Control group
Schizophrenia	(6) 26.1%	(9) 36%
Schizophreniform disorder	(4) 17.4%	(1) 4%
Schizoaffective disorder	(4) 17.4%	(1) 4%
Brief psychotic disorder	(4) 17.4%	(6) 24%
Bipolar disorder	(5) 21.7%	(8) 32%
Total	(23) 100.0%	(25) 100.0%

Patients with an isolated psychotic episode were diagnosed as brief psychotic disorder or schizophreniform disorder, according to DSM-IV criteria. For statistical analyses, diagnoses in the postpartum group were categorized as schizophrenia and other psychotic disorders and, mood disorders. During the follow-up period 21.7% (n = 5) of the postpartum patients developed a mood disorder and 77.9% (n= 18) developed schizophrenia and other psychotic disorders, whereas 32.0% (n= 8) of the control group was diagnosed with a mood disorder and 68.0% (n= 17) with schizophrenia and other psychotic disorders. The distribution of the final diagnoses in the 2 groups was similar ($p = 0.523$) (Table II).

Thirteen postpartum depression patients who were not included in to the comparison part of the study with the control group, were diagnosed as mood disorder in the long-term follow-up (10 patients were diagnosed with major depressive disorder and 3 with bipolar disorder). Confusion was not observed in postpartum depression patients.

Confusion was observed in 34.8% (n= 8) of the 23 patients diagnosed with postpartum psychosis, in contrast to 4.1% in the control group (n= 1). Patients with postpartum psychosis had more confusion than the control subjects. ($P= 0.006$, $\chi^2 = 7.451$). In terms of confusion in the postpartum group the differences in final diagnoses were significant between the schizophrenia and other psychotic disorders and mood disorders groups ($p= 0.047$). The following diagnoses were made in the patients with confusion during the long-term follow-up: 2 patients were diagnosed with schizophrenia, 2 with schizoaffective disorder, 3 with brief psychotic disorder, and 1 with schizophreniform disorder.

Of the patients with postpartum psychosis, 8.7% (n= 2) were moderately ill and 91.3% (n= 21) were severely ill. In the control group, 8% (n= 7) were moderately ill

and 72% were (n= 18) severely ill. There were no significant differences among the groups in terms of CGI-S score.

In the assessment conducted with CGI-R in the sixth month of the study, it was noted that 56.5% (n= 13) of the postpartum psychosis patients were in full remission and 43.4% (n= 10) were partially remitted. In the control group, 64% (n= 16) were in full remission and 36% (n= 9) were partially remitted. There were no significant differences among the groups in terms of CGI-R score.

When the CGI-R rates were considered according to the final diagnoses of the postpartum psychosis patients, 44.4% (n= 8) of the patients with schizophrenia were in full remission and 55.6% (n=10) were partially remitted, whereas 100% (n= 5) of the patients with a mood disorder were in full remission. It was seen that remission rates differed significantly according to the final diagnosis ($p = 0.046$).

During follow-up, 65.2% (n= 15) of the patients with postpartum psychosis had recurrences, 47.8% (n= 11) had another parturition, and postpartum psychosis recurred in 7 of these patients. In the follow-up period, 72% of the control patients had recurrence (n= 18). The difference between the 2 groups in the rate of recurrence was not significant.

Recurrence related to a new parturition was significantly higher in the mood subgroup of postpartum patients ($p= 0.001$); however, there were no difference in the final diagnoses in the recurrence of illness, independent of parturition ($P= 0.611$) and total recurrence ($p= 0.122$).

The mean age of the 23 postpartum psychosis patients who were followed-up for an average 4.00 ± 1.62 years (range: 2-6 years) was 25.09 ± 5.93 years (range: 18-43 years) and the mean duration of education was $6.82 \pm$

Table III. The clinical features, age, and education level of the postpartum psychosis group and the control group.

	Postpartum psychosis (n= 23)	Control group (n= 25)	p
Age (at the initial phase of the study)	25.09 ± 5.93 (18-43)	26.24 ± 3.81 (19-33)	p = 0.129*
Duration of education	6.82 ± 2.83 (5-13)	6.64 ± 2.34 (5-13)	p = 0.962*
Family psychiatric history	(6) 26.1%	(4) 16.0%	p= 0.487**
Postpartum psychiatric disorder in the family	None	None	
Confusion	(8) 34.8%	(1) 4.1%	p = 0.006*** χ ² = 7.451
Recurrence	(15) 65.2%	(18) 72%	
Duration of follow-up (years)	4.00 ± 1.62 (2-6)	3.96 ± 1.24 (2-6)	p= 0.746*
Duration of hospitalization (days)	20.30 ± 8.25 (11-45)	18.04 ± 3.32 (11-25)	p= 0.803*
Length of time that symptoms get started to decrease	19.47 ± 9.76 (6-43)	15.00 ± 2.30 (8-19)	p = 0.186*

*Mann Whitney U Test, **Fisher's Exact Test, ***Chi-square Test

2.83 years (range: 5-13 years). the mean number of deliveries was 1.43 ± 0.84 (range: 1-4), the length of time in postpartum that symptoms were observable was 17.77 ± 25.83 days (range: 2-115 days), the mean number of days that symptoms get started to decrease was 19.47 ± 9.76 (range: 6-43 days), and duration of hospitalization was 20.30 ± 8.25 days (range: 11-45 days). In the control group± the mean follow-up duration was 3.96 ± 1.24 years (range: 2-6 years), the mean age was 26.24 ± 3.81 years (range: 19-33 years), mean duration of education was 6.64 ± 2.34 years (range: 5-13 years), mean duration of hospitalization was 18.04 ± 3.32 days (range: 1-25 days), and the mean number of days that symptoms get started to decrease was 15.00 ± 2.30 (range: 8-19 days). There were no statistical differences between the control and study groups in terms of age ($p= 0.125$), duration of education ($p= 0.962$), duration of hospitalization ($p = 0.803$), follow-up period ($p= 0.746$), and length of period that symptoms get started to decrease (Table III).

DISCUSSION

As mentioned in the introduction section, the issue of whether postpartum psychiatric disorders are a separate diagnostic category or exacerbation of mood disorders or schizophrenic disorders remains controversial in the psychiatric literature. In the past postpartum psychiatric disorders were considered specific psychiatric disorders related to pregnancy and parturition and, therefore, were evaluated within a different set of diagnostic criteria

(Kandrmaz et al., 1979; Dean and Kendell, 1981); however, currently they are evaluated within the existing diagnostic criteria.

The majority of studies in literature on postpartum psychiatric disorders are retrospective and, conducted with patient files or interviews in the latest period. In addition, the majority does not include a control group. The present study is a controlled prospective study on postpartum psychiatric disorders.

As postpartum psychosis is not included as a specific diagnostic entity in DSM-IV and has a variable clinical course, standard scales used for assessing schizophrenia or mood disorders could not be used in this study. DRS subscales were used to diagnose confusion since there is not a Turkish, valid and reliable scale for assessing this condition. In addition, the small study population and gathering retrospective information about the onset of illness from patients and families are other limitations of this study.

The mean duration of onset of postpartum mental disorder symptoms was 2.5 weeks in our study, which is similar to the finding of 2 weeks in a study conducted in India by Agrawal et al. (1997). However, our duration was shorter than the 3.6 weeks in a Turkish population reported by Kirpınar et al. (1999) and Robling et al.'s (2000) finding of 4 weeks in England. Although these findings highlight that the time of onset becomes later when moving from east to west, this conclusion is hypo-

thetical, as the methodologies used in other studies were different.

There were no statistical differences in terms of the duration of time that symptoms get started to remit among the postpartum psychosis patients (19.47 ± 9.76) and the control group (15.00 ± 2.30). This finding differs from Kirpınar et al.'s (1999) report that symptom remission was earlier in the postpartum group.

We found that in 73.9% of the patients the onset of postpartum psychosis occurred after the first parturition. This finding is compatible with other study findings of an increased risk of postpartum psychosis following first parturition (Kirpınar et al., 1999; Pfuhlmann et al., 1999; Blackmore et al., 2006). In the light of this findings it can be proposed that the first parturition is more risky in terms psychiatric disorders than subsequent deliveries due to biological and psychological changes.

There are very few studies on postpartum mental disorder symptoms. It was reported that bizarre behavior and mental confusion are frequent among patients diagnosed with postpartum psychosis (Wisner et al., 1994). Brockington et al. (1981) compared 58 postpartum psychosis patients to 52 non-postpartum psychosis patients and found the severity of confusion was higher in the postpartum group. In contrast, Oosthuizen et al., (1995) compared 20 postpartum psychosis patients to 20 manic women matched in terms of age and did not find a statistical difference in terms of fluctuations in the consciousness, orientation disorder, and concentration changes; however, the frequency of perplexity was higher in the postpartum psychosis group. Our findings showed that confusion was more prevalent among patients diagnosed with postpartum psychosis (34.8%) than first time non-postpartum psychosis patients. The confusion rate in Kirpınar et al.'s (1999) study was higher than in our study (59.3%). This difference in the confusion rates might be due to different confusion assessment methods. The authors also found that confusion was more prevalent among postpartum psychosis patients in comparison to patients with other postpartum disorders. When the postpartum patients were evaluated in the present study, confusion prevalence was significantly higher in patients diagnosed with schizophrenia and other psychotic disorders than in patients diagnosed with mood disorders ($p = 0.047$). We think that this difference would be more striking in a larger sample. In the light of these findings it can be concluded that confusion is a very important component of postpartum psychosis and that confusion seen

with postpartum psychiatric disorders point to a schizophrenic process.

It was seen that in Western countries the most frequent diagnoses are mood disorders in the long-term follow-up of postpartum psychiatric disorders (Brockington et al., 1981), whereas in Eastern countries the most frequent diagnoses are schizophrenic disorders (Kirpınar et al., 1999). A study that compared psychiatric disorder patients with and without postpartum onset, found a significant difference in the initial diagnoses; however, when these 2 groups were reclassified after 5 years, according to research diagnostic criteria (RDC), 95% of the patients with postpartum onset and 75% of the patients without postpartum onset were diagnosed with a mood disorder (schizoaffective disorder, manic phase, or bipolar disorder) (Wisner et al., 1995). In another study it was found that 86% of 110 women who had a postpartum psychotic episode met the criteria for bipolar disorder in the long-term (Robertson et al., 2002). Similar to Kirpınar et al.'s (1999) findings, our findings showed that schizophrenia and other psychotic disorders (77.9%) were more prevalent as final diagnosis than mood disorder (21.7%) among patients with postpartum onset psychosis.

In long-term follow-up studies the recurrence rate of postpartum psychosis was 65%, both with future parturitions or independent of parturition (Müller, 1985). In a review study, which included 16 studies, 18%-37% of patients diagnosed with postpartum psychosis had a postpartum episode and 39%-81% had an episode independent of parturition (Chaudron and Pies, 2003). In our study 65.2% of the patients with postpartum psychosis had recurrences, 46% of which had a recurrence after a subsequent parturition. The recurrence rate was reported to be 81.2% by Kirpınar et al. (1999) and 51% by Pfuhlmann et al. (1999). During the follow-up period, psychiatric disorders recurred in 72% of our control patients. These results revealed that postpartum psychosis recurs as do other psychotic episodes. In addition, it was shown that independent of parturition or any other stressor the recurrence risk after the first psychotic episode was high in the patients with postpartum psychosis. Either family history of psychiatric disorders was not a determinant of recurrence; however, larger samples are needed to better understand this relationship.

When the severity and remission rates of mental disorders in the initial phase and follow-up of the 2 groups were compared, no significant difference was found.

We evaluated postpartum patients in terms of their final diagnoses, and found that the remission rate in the patients with mood disorders was better than in the patients with schizophrenia and other psychotic disorders. These findings showed that long-term diagnoses are better identifiers of the illness course than postpartum onset.

In conclusion, postpartum onset cannot identify the course of illness alone. Our findings showed that during long-term follow-up postpartum psychosis patients sig-

nificantly differed in terms of confusion from those patients with a psychotic episode unrelated to parturition. Confusion seems to be a better identifier of diagnosis and course than the postpartum onset. During long-term follow-up, patients diagnosed with postpartum psychosis were mostly diagnosed with schizophrenia, similar to the patients with a psychotic episode unrelated to parturition. This finding supports the view that there is no need for a different diagnostic category for postpartum disorders in DSM-IV.

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