

Treatment in Psychiatry begins with a hypothetical case illustrating a problem in current clinical practice. The authors review current data on prevalence, diagnosis, pathophysiology, and treatment. The article concludes with the authors' treatment recommendations for cases like the one presented.

Postpartum Psychosis: Detection of Risk and Management

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Mrs. A, a 34-year-old married mother who lived with her husband and their 5-year-old daughter, strangled her infant son to death 3 weeks after birth. She had a planned, healthy pregnancy with some depression at 28 weeks' gestation. She had a normal spontaneous vaginal delivery, giving birth to a healthy boy, "B." She began breastfeeding immediately. From postpartum days 2 through 11, her depression worsened. She was unable to sleep but could not get out of bed or attend to her hygiene. She was suspicious that her husband would harm B. On postpartum day 2, she began having obsessional, ego-dystonic images of throwing B out the window. She believed, despite the pediatrician's reassurances, that she was harming B with her breast milk and that he was losing weight. She was unable to give him a bath, believing that he had "gas" or "something bad" inside and could not be moved.

On day 12, while alone in the car with B, she thought of killing herself and the baby, although "at the time I don't think I had any idea why." On day 13, she attempted suicide by overdose. She slept through the night and did not report the suicide attempt to anyone. She abruptly weaned B and then became disorganized and confused, unsure of what formula and size and types of bottles and nipples to use. She was agitated, calling friends day and night for opinions. On day 15 she attempted to smother B with a towel. "I don't believe it was a thought," she said. "It was 'autopilot.'" Her husband came upstairs, and Mrs. A believes that his presence shook her out of the "state" she was in. "I did not have the compulsion to hurt him any more after that evening ... I just thought something was wrong, and I wasn't thinking straight." Her husband knew that she was not her-

self, but he did not understand that she was depressed and psychotic. Mrs. A did not receive treatment for her illness.

On postpartum day 20, Mrs. A awoke at 6:30 a.m. to feed B when he cried. Her husband and daughter kissed her goodbye, and Mr. A walked their daughter to school before going to work. She soon felt as if she was "taken over." She describes a dazed, trance-like state with confusion: "Something internal like a force ... it was not a voice ... but I did not have control. It was an instant. I don't recall thinking anything ... I had no feelings. It was happening but I wasn't there.... At the time, nothing came into my head saying, 'No, do not do this.' ... My inside was gone and it was something else." She briefly placed a towel over B's nose and mouth, but stopped. The "force" then became intense. She placed a washcloth in B's mouth and then strangled him with a telephone cord. She felt she was not connected to her own hands. When B was dead, she washed him with a cloth, removed the remnants of his umbilical cord, changed his diaper, and left the room. She went into the bathroom, where she made an unsuccessful attempt to cut her wrists.

Mrs. A was charged with homicide and was incarcerated. She described her psychiatric history as "moody" with cycling states, every 3 days, of jocularity, creativity, and high energy alternating with an irritable, withdrawn mood and tearfulness. She had two previous episodes of major depression, including a postpartum depression after the birth of her daughter that was associated with ego-dystonic images of throwing her daughter against a wall or hitting her with a hammer. She denied psychotic thoughts. The depression resolved in 6 months without treatment. She was a successful "supermom" with her daughter and was an energetic worker in her job.

Mrs. A's mother has a diagnosis of bipolar disorder, which worsened after the birth

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her second child. She had multiple psychiatric hospitalizations for psychotic episodes with chronic paranoia and grandiose, volatile moods.

Epidemiology

The prevalence of postpartum psychosis in the general population is 1–2 per 1,000 childbirths, and the rate is 100 times higher in women with bipolar disorder or a previous history of postpartum psychosis (1). Bipolar disorder and, to a lesser extent, schizophrenia have elevated prevalences in postpartum psychosis (2, 3).

Kendell et al. (4), using data on 54,000 births over a 12-year period, linked obstetric and psychiatric case registers to determine the temporal relationship of childbirth and psychiatric admissions for postpartum psychosis. They found that psychiatric admissions were seven times more likely in the first 30 days after childbirth than in the prepregnancy period, suggesting that metabolic factors may be involved in the genesis of postpartum psychosis. They also found that among patients who developed postpartum psychosis after childbirth, 72%–80% had bipolar disorder or schizoaffective disorder and 12% had schizophrenia.

Indicators of a possible bipolar diagnosis include a history of missed or misdiagnosed mood episodes, any previous mania or hypomania, and a family history of bipolar disorder or postpartum psychosis (5).

Phenomenology

Brockington et al. (6) identified a relationship between postpartum psychosis and bipolar disorder in a comparison of 58 cases of psychosis beginning within 2 weeks of childbirth and 52 episodes of nonpuerperal psychotic illness in young women. Patients with postpartum psychosis had more mood lability, distractibility, and confusion and were more likely to have impaired sensorium, bizarre quality of delusions, and memory loss.

Using formal neuropsychiatric testing, Wisner et al. (7) identified a “cognitive disorganization psychosis” in mothers with childbearing-onset affective psychosis that was not present in women with nonchildbearing affective psychosis. Psychosis associated with childbirth included cognitive impairment, bizarre behavior, thought disorganization, lack of insight, delusions of reference, delusions of persecution, and greater levels of homicidal ideation and behavior. Other symptoms included visual, tactile, and olfactory hallucinations and a delirium-like appearance. This complicated picture of affective (schizoaffective or bipolar) psychotic phenomenology associated with a picture of de-

lirium has been historically but inconsistently reported in the psychiatric literature on postpartum psychosis.

Chandra et al. (8) found that a majority of women with postpartum psychosis (53%) had delusional ideas that were related to the infant, such as the idea that someone would kill the baby or that the baby would be harmed by their breast milk. Oosthuizen et al. (9) found in a comparison of 20 women with postpartum psychosis and 20 women with bipolar disorder that the former had more rapid, intense shifts of mood; more confusion; and more delusions of control, such as feeling under the influence of an overpowering force that made them act completely out

of their own control. Kadrmas et al. (10) found that 62% of their postpartum bipolar psychotic patients had Schneiderian delusions and hallucinations, symptoms defined as thought broadcasting, experiences of alienation in which feelings and actions are controlled by an outside force, and experiences of influence in which impulses, thoughts, or actions are controlled by some external agency.

“Postpartum psychosis is a psychiatric emergency. Inpatient psychiatric treatment is essential to ensure the safety of mother and baby.”

Infanticidal Thoughts

Approximately 4% of women with postpartum psychosis commit infanticide (11). Postpartum major depression is often misdiagnosed. In a study (12) of 45 filicidal women admitted to a forensic psychiatric unit during a 20-year period, 75.6% were diagnosed with major depression and 24.4% with bipolar disorder at admission. At discharge, 73.3% had been rediagnosed with bipolar disorder based on hypomanic or manic episodes during detention.

For any mother who presents with a postpartum mood disorder, the clinician must inquire about thoughts of harming herself or the infant and determine whether infanticidal thoughts are obsessional or psychotic (2). Women with postpartum depression commonly experience comorbid obsessive-compulsive thoughts (41%–57%), which include obsessional ego-dystonic images of harm to their infant, with preservation of rational judgment and reality testing (13). Examples include sudden images of throwing the baby out the window or off the changing table. In contrast, delusional thoughts about harm to the infant in postpartum psychosis are ego-syntonic, associated with psychotic beliefs and loss of reality testing, with a compulsion to act on them and without the ability to assess the consequences of their actions (13).

Etiology

Current thinking on the causes of postpartum psychosis is focused on the abrupt hormonal loss at birth and its effect on mental status. Women with bipolar disorder are often exquisitely sensitive to the precipitous loss of estrogen and progesterone at childbirth (14). The physiological processes of parturition begin as some hormone levels peak 200-fold over the course of gestation, then rapidly

decline within 24 hours after childbirth. Bloch et al. (14) provided evidence of the involvement of these hormones in postpartum depression by inducing a hypogonadal state in nonpregnant women by administration of leuprolide. Adding back supraphysiologic doses of estradiol and progesterone for 8 weeks and then withdrawing both steroids under double-blind conditions simulated childbirth. Five of the eight women with a history of postpartum depression developed mood symptoms, whereas none of those without such a history did so.

Family History

An additive familial diathesis for bipolar disorder and postpartum psychosis in women who suffer from postpartum psychosis has been demonstrated in a family study. Jones and Craddock (15) found that postpartum psychosis affected 74% of mothers with bipolar disorder and a first-degree relative with postpartum psychosis, compared with only 30% of bipolar women without a family history of postpartum psychosis.

Vulnerability to the triggering of bipolar episodes by childbirth may define a genetically relevant subtype of bipolar disorder. Jones et al. (16) selected families with bipolar disorder in which there was at least one family member who had a manic or psychotic episode within 6 weeks of delivery. Individuals were coded as affected if they had been diagnosed with bipolar I or II disorder or schizoaffective disorder, bipolar type. A genome-wide significant linkage signal was observed on chromosome 16p13 and a genome-wide suggestive linkage on chromosome 8q24. Variation at the serotonin transporter gene also exerts a significant influence on susceptibility to such episodes (17).

Management

Postpartum psychosis is a psychiatric emergency. Inpatient psychiatric treatment is essential to ensure the safety of mother and baby. After a physical examination is performed, metabolic causes must be ruled out (2, 5). The clinical evaluation should include CBC, complete blood chemistry, thyroid function and antithyroid antibody tests, and calcium, vitamin B₁₂, and folate levels (2).

Treatment should be guided by the symptom profile (18). Acute treatment involves the use of mood stabilizers, antipsychotics, and benzodiazepines. Insomnia should be treated aggressively (5, 18). Antidepressants should be avoided because they may induce rapid cycling or mixed states.

ECT should be considered for management of illness that is unresponsive to conventional therapy or when a quick resolution is required because of illness severity or safety concerns (18). The neuroendocrine role in the pathophysiology of postpartum disorders suggests that hormone replacement may be therapeutic in postpartum affective states. Ahokas et al. (19) tested this hypothesis in 10 women with ICD-10 postpartum psychosis who had baseline serum estrogen levels consistent with gonadal

failure (19). Psychiatric symptoms diminished significantly on treatment with sublingual 17-beta estradiol.

Once metabolic causes for acute psychosis have been ruled out, pharmacotherapy should be based on the underlying diagnosis. A patient who has a known cyclic mood illness or a close family member with bipolar disorder is most likely experiencing an episode of bipolar illness. She will benefit from an antimanic agent and an antipsychotic agent (2, 5). Atypical antipsychotics that have received approval from the U.S. Food and Drug Administration for the treatment of bipolar disorder may be considered. Breastfeeding should be discouraged for the infant's safety and to avoid sleep disruption in the mother.

Before hospital discharge, a plan must be in place that will incorporate close follow-up, adequate sleep, and reduction of stressors (2). Family psychoeducation is imperative. Separation from the infant may still be essential. Someone should be with the baby at all times until the outpatient treating psychiatrist reports that all symptoms of psychosis have resolved. Both obstetrician and pediatrician should be advised about the mother's mental status.

Prevention

Given the high risk of relapse and recurrence in women with bipolar disorder or postpartum psychosis, prophylaxis is imperative (2). Preventing sleep loss near delivery may avert an episode of postpartum psychosis (20). There is no consensus on what mood stabilizer or antipsychotic should be the first-choice agent for prevention of recurrence of postpartum psychosis. In selecting pharmacotherapy, the clinician should primarily consider the patient's past history of effective treatment for mood episodes. Lithium is the mood stabilizer with the most evidence for prophylaxis of psychosis (21). Some clinicians recommend introduction of lithium immediately after delivery, and others in the second or third trimester.

Careful and complete investigation of the psychopathology of any woman with a postpartum mood disorder may determine the presence of psychosis and prevent infanticide. Inquiry into the presence of bizarre delusions of influence or passivity, tactile or olfactory hallucinations, or cognitive impairment may detect an emerging psychosis. Despite the severity of their symptoms in the immediate postpartum period, women who have postpartum psychoses have a better overall prognosis compared with women who have nonpuerperal psychoses, and they are less likely to have recurrent illness beyond the postpartum period (22).

Summary and Recommendations

Postpartum psychosis is a manifestation of a lifetime vulnerability to affective disorders with childbirth as the precipitating factor. The initial diagnosis to consider in a woman who presents with postpartum psychosis is bipolar disorder (2, 5).

Cognitive dysfunction and disorganization, bizarre behavior, confusion, delusions, and impaired sensorium and

orientation are consistent with a clinical picture of delirium. This may imply that postpartum psychosis is a distinct diagnostic entity (5) of bipolar psychosis associated with delirium due to the metabolic effects of abrupt hormonal withdrawal. Postpartum psychosis should be suspected in any patient presenting with postpartum depression or mania and a previous history of missed or misdiagnosed mood episodes and a family history of bipolar disorder.

Evidence for Mrs. A's postpartum psychosis may be seen in her delusional thoughts about baby B's health and her bad breast milk, her paranoid belief that someone would harm the baby, her delusions of influence, and her confusion, sleeplessness, and state of agitation. Further evidence supporting Mrs. A's diagnosis is her history of mood swings, her postpartum depression, and her mother's bipolar diagnosis. All women should be queried about these matters in the antenatal period and considered for prophylactic treatment.

Although Mrs. A was distressed by her initial postpartum obsessional thoughts of harm to the infant, she recognized that they were irrational and she did not fear that she would act on them. In contrast, when she experienced the delusion of influence that she was controlled by a force within, she had no insight, judgment, or choice.

In addition to the hormonal loss at delivery, Mrs. A abruptly discontinued breastfeeding, which represented another hormonal change. Although few data are available on the effects of breastfeeding on mood and mental status (23), it is notable that Mrs. A's first failed infanticide attempt occurred within a week of discontinuation of nursing.

As noted, treatment of postpartum psychosis is based on the underlying diagnosis, and pharmacotherapy relies on mood stabilizers, antipsychotics, and benzodiazepines. In the case of Mrs. A, because of the death of her child, she was treated with lithium and an antipsychotic in a forensic setting.

Received Oct. 20, 2008; revision received Dec. 8, 2008; accepted Jan. 6, 2009 (doi: 10.1176/appi.ajp.2008.08121899). From Columbia University College of Physicians and Surgeons. Address correspondence and reprint requests to Dr. Spinelli, Columbia University College of Physicians and Surgeons, Department of Psychiatry, 1051 Riverside Dr., Box 123, New York, NY 10025; mgs8@columbia.edu (e-mail).

Dr. Spinelli reports no competing interests.

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