How would you approach developing a management plan for a pregnant woman who has a history of postpartum psychosis?

Mental health issues can manifest at any point in a person's life. In the perinatal period, factors such as the mother's positive social relationships, social activities, environmental stability and her physical health all contribute to her mental well - being. For women who suffer with, or are susceptible, to mental illness, pregnancy and postpartum period can be a particularly difficult time. It can have potentially serious implications on the mother if she is prone to mental health episodes, such as suicidal thoughts and attempts, discordant bonding with her child, and, rarely, infanticide. Mental health related causes account for the ratio of one in eleven of the women who died during or up to six weeks after pregnancy [1,2]. Postpartum psychosis (PP) is a rare but serious mental health disorder with potentially devastating consequences for the mother and child. Hence, a rapid and accurate diagnosis is essential in formulating an appropriate management plan and reducing the chances of the condition in future pregnancies. This essay will consider the prevalence and causes of postpartum psychosis in the perinatal period, investigation and management of postpartum psychosis and the factors involved in developing a management plan for pregnant females with a history of postpartum psychosis.

Postpartum Psychosis and the Perinatal Period

A significant amount of research in the perinatal period focuses on postpartum psychosis. PP is a severe mental illness with an acute onset shortly after childbirth, requiring emergency admission. The common presentation is of mania, severe psychotic depression or mixed episodes with features of high and low mood. The clinical features of postpartum psychosis also include euphoric, restless or labile mood, erratic and disorganised behaviour, confusion, cognitive dysfunction and insomnia. The core features of psychosis involve mood-incongruent delusions, delusions of control and hallucinations, and content usually relates to harming the infant or themselves[3]. The onset is usually within 2 weeks of delivery, with a study showing days 1 to 3 have the most symptomatic onset[5]. The typical pattern is of sudden onset and rapid deterioration along with fluctuations in the intensity of symptoms and severe mood swings.

Despite its clinically well-recognised prominence, current classification systems do not recognise PP as a distinct nosological entity. However, the American Diagnostic and Statistical Manual of Mental disorders manual (DSM) has allowed clinicians to apply the 'with postpartum onset' specifier to mood disorders if the patient meets the criteria of a mood episode and onset is within 4 weeks postpartum[4]. The International Classification of Diseases, tenth edition (ICD-10), includes the category of 'mental and behavioural disorders associated with the puerperium, not elsewhere classified' but the use of this is only encouraged when unavoidable and when no other relevant category of mental health disorders is found for episodes occurring within 6 weeks postpartum. Nevertheless, the term 'postpartum psychosis' is widely in clinical use.

Epidemiology of Postpartum Psychosis

The incidence of postpartum psychosis is estimated to be 1 to 2 per 1000 births of postpartum psychiatric admissions and is debatable due to some women being treated at home, especially if facilities for admission of baby are not available, and some women being admitted in the postpartum period for disorders other than psychosis [6,7]. Furthermore, the study by Kendall et al was conducted in a developed country (Edinburgh in 1987) thus is not generalizable, and potentially out of date. The risk rises to 1 in 7 psychiatric post-partum admissions if the woman has had one past episode of PP[7]. A recent systematic review by VanderKruik et al found postpartum psychosis incidences vary between 0.89 and 2.6 in 1000 births across several high and low income countries, which are consistent with the frequently cited incidence of 1 to 2 per 1000 births[8]. However, the variations in instruments, methods and timeframes for identification of postpartum cases have presented obstacles in gaining accurate global estimates of PP and comparing estimates across countries. In addition, it has been suggested that there is evidence for including PP in diagnostic categories of bipolar disorder or schizoaffective disorder[7,9].

Puerperium has been shown as a time of increased risk of severe manic or psychotic mood disorders and, in particular, childbirth is known as a trigger for severe PP episodes in patients. Kendell and colleagues have noted a 22-fold increased risk of having an affective psychotic episode within 4 weeks of delivery[7]. Additionally, Terp and Mortensen's and Munk-Olsen's studies and analysis showcased differences based on individual disorders – women with bipolar disorder have a higher risk of being admitted for episodes after childbirth whereas schizophrenia patients have a lower chance after childbirth compared to other times[10, 11].

A consistent association has been found between PP and bipolar disorder. Women with a history of bipolar disorder have their risk raised to one in five of suffering from a severe recurrence after childbirth and a greater risk, approximately one in two, of women experiencing postpartum mood episodes [12, 13, 14]. Women with bipolar disorder and a personal or family history of PP are at high risk of developing PP, with more than one in two deliveries affected by PP [15, 16].

Risk factors of Postpartum Psychosis

Genetic factors have been investigated for increasing vulnerability to triggering puerperal episodes of bipolar disorder. Family studies have been conducted that suggest vulnerability of affective disorders increases in relatives of women with a history of PP[15, 17]. Additionally, it has been proposed that puerperal psychosis is a marker for a familial form of bipolar disorder and a specific vulnerability in triggering puerperal episodes of bipolar is familial [15,17]. Genome-wide linkage studies have possibly identified the location of a susceptibility gene on chromosome 8 and 16 and candidate genes involved in serotonergic, hormonal and inflammatory pathways are under investigation [4, 18, 19]. So far, however, no specific gene variants have been

consistently replicated and it is feasible that one or more susceptibility genes are involved in vulnerability to triggering puerperal episodes of bipolar disease.

In terms of obstetric risk factors, primiparity has also been shown to have an association with postpartum psychosis. PP episodes are found to be more common following delivery of first-borns [20]. The reasoning behind this is not clear but one of the explanations involved the link between PP and psychosocial factors, for which little evidence was found, and another explanation seeks to explore the effect of primiparity due to biological differences between the first and subsequent pregnancies, such as hormonal and immunological. Other obstetric factors that were of interest include complications during delivery and a study by Blackmore has found that women with higher delivery complications had a higher risk of PP [21]. However, the sample size was small and thus not generalizable to all populations. Other factors examined were caesarean section, sex of the baby and gestation period but these showed little association with PP episodes.

A proposed theory is that during the perinatal period women become concerned of the teratogenic effect of psychotropic medications they are taking regularly and may wish to withdraw from continuing mood stabilisers. When considering changes to medication as a risk factor for PP, Viguera et al compared rates of recurrence of women with bipolar disorder discontinuing lithium due to pregnancy and those discontinuing for other reasons [22]. The study reported similar rates of recurrence during the first 40 weeks after lithium discontinuation for both groups but in weeks 41 to 64, postpartum recurrences were 2.9 times more common than recurrences in non-pregnant women (70% vs. 24%). Therefore it was concluded that the increased risk of recurrence following delivery, in women with bipolar disorder, is not a result of stopping mood-stabilising medications.

Hormonal factors have received attention and the role of hormones, including oestrogen, progesterone, prolactin, follicular stimulating hormone (FSH) and luteinising hormone (LH), has been explored. A hypothesis was suggested of a post-delivery reduction of circulating oestrogen triggering a postpartum relapse however studies have not supported this hypothesis [23]. Other studies have also assessed a range of hormonal measures in women with postpartum affective episodes and in controls but results have not demonstrated a consistent and replicating pattern of hormonal differences.

The stages of late pregnancy and early postpartum period are characterised by significant sleep disruption. An abnormal circadian sleep rhythm could potentially lead to a postpartum psychosis episode as sleep deprivation has been found to improve negative symptoms but provoke positive symptoms of schizophrenia and there is an association between gonadal steroids and circadian rhythms [24]. However, this causal relationship has not been investigated extensively and current evidence shows conflicting data.

Importance of Postpartum Psychosis

Follow up studies of severe postpartum psychosis episodes have shown that the initial recovery period prognosis is excellent yet women still remain at risk of subsequent puerperal and non-puerperal episodes. Subsequent pregnancies have a recurrence rate of 50%, and approximately 50% of women have further non-puerperal episodes [25]. A study has shown that 26% of women with PP continue to report on-going symptoms a year after childbirth and has recorded figures of 69% for women with PP experiencing at least one further non-puerperal affective episode [20].

Recently a lot of progress has been made in reducing deaths in childbirth-related incidents, especially targeting haemorrhage and infection. Suicide, however, is still one of the leading causes of maternal mortality in the UK. The most common reason for suicide in mothers is an abrupt onset of severe psychotic illness within days of delivery – postpartum psychosis by definition. Furthermore, the majority of women who have an episode of postpartum psychosis can be predicted by their previous history. The confidential enquiry for Maternal Deaths, conducted in the UK, reported around 46% of women who had committed suicide had previous contact with psychiatric services and half of them had previously had a hospital admission due to severe episode of psychiatric illness following delivery [26, 27].

Identification and Management of Postpartum Psychosis

It is crucial that women at high risk of PP should be identified to help form an individualised management plan. The important risk factors are having a history of bipolar disorder, previous history of PP, a first degree relative who has a history of PP and having a first degree relative with bipolar disorder [14]. Due to the relapsing and remitting nature of bipolar disorder, many women at high risk are often currently well and do not have contact with the mental health services thus are less likely to recognise the gravity of the situation. In addition, many pregnancies are unplanned. The National Institute for Health and Clinical Excellence (NICE) guidelines and other reports and enquiries have recommended all antenatal women to be screened for relevant risk factors and women at risk to receive formal risk assessment and management plans, ideally arranged by perinatal psychiatric services [28].

Postpartum psychosis is a psychiatric emergency and inpatient psychiatric treatment is necessary to ensure the mother and baby are safe. Upon admission, a physical examination is performed and metabolic causes are ruled out, with clinical evaluation including Full Blood Count (FBC), blood chemistry, thyroid function, anti-thyroid antibody tests, calcium, vitamin B12, and folate levels. NICE guidelines recommend women within a year of childbirth to be admitted into specialist mother and baby units. However, this is not often practical due to the provision of services in hospitals and for majority of women they are not able to gain admission for both the baby and themselves.

Management is guided by the symptom profiles and is similar to non-postpartum psychosis. Treatment is also led by possible comorbidities, response to previous treatments, drug tolerability, patient's cooperation and whether they are breast-feeding. Acute pharmacological treatment includes mood stabilisers, antipsychotics and benzodiazepines. Lithium is an important medication used in management of PP. However, the American Academy of Paediatrics (AAP) has discouraged the use of lithium in breast-feeding mothers due to concerns over the presence of lithium in breast milk and lithium toxicity in infants [29]. A suitable alternative for breast-feeding mothers is sodium valproate and carbamazepine. Atypical antipsychotics are usually first-line for psychosis and mania as they are well tolerated; olanzapine and quetiapine have been found to be the most acceptable based on adverse side effects on mother and infant. Under medical supervision, other atypical antipsychotic options include chlorpromazine, haloperidol and risperidone. Benzodiazepines, especially intramuscular lorazepam and haloperidol, are used in acute settings to achieve rapid tranquilisation but they are not recommended as suitable for monotherapy in postpartum psychosis. It should be noted, however, that few studies have investigated pharmacological interventions for postpartum psychosis or examined effects on infants exposed to antipsychotic drugs during breast-feeding thus the choice of drug is often based on studies outside the perinatal period.

Electroconvulsive Therapy (ECT) is also an option for illness that is unresponsive to conventional treatment or when a rapid symptomatic intervention is required due to illness severity or safety concerns. But it is a challenging option for women who have not received psychiatric treatment in the past and there is limited data on its use in this context. Establishing a regular sleep pattern is crucial for new mothers, as is engaging family members to help support the mother and baby. Before hospital discharge, family and patient psychoeducation is essential and a plan should be put into place involving outpatient psychiatrist follow-up appointments, adequate sleep, and reducing stressors. This may even involve separation from infant temporarily and partner or family members taking care of the infant.

Management plan for women with history of postpartum psychosis

Women who have a high risk of PP need attention to their care before conception, throughout pregnancy and during the postpartum period. Guidelines have stressed the important of preconception care for women with severe mental illness of a childbearing age. A large proportion of pregnancies are unplanned, especially in women with bipolar disorder, and it is crucial that family planning and contraception are discussed with all women of childbearing potential. For women with a history of postpartum psychosis and/or severe mental illness, her individual relapse or recurrence should be discussed, including severity and nature of previous episode, time since last episode, and family history of episodes in relation to childbirth. The preconception stage can be when issues of importance for a healthy pregnancy are addressed, such as smoking, obesity, diet, drug and alcohol use, domestic violence, folate and vitamins, and physical exercise. Optimisation of mental health, alongside with physical health, is also key. The risk of illness following childbirth, recognising the symptoms and seeking help should be emphasised. Women suffering with

severe mental illness are often on medications and the impact of stopping or continuing medications before, during and after the pregnancy needs to be reviewed according to an individualised risk-benefit analysis.

Royal College of Obstetricians and Gynaecology guidelines suggest women at high risk, even if they are currently well, to be referred in pregnancy for psychiatric assessment and monitored regularly for 3 months after delivery [30]. A history of serious postpartum psychosis, moderate symptoms developed in late pregnancy or early postpartum and a family history of postpartum psychosis are indications of referral to specialist perinatal services, where possible. Psychiatric services are advised to create priority care pathways for pregnant and postpartum women. Ideally, multidisciplinary teams should be in charge of the women's care, and these teams involve an obstetrician (preferably with a special interest in perinatal mental health), midwives, perinatal psychiatrist, community psychiatric nurse, health visitors and General Practitioners (GP). Communication between maternity and mental health services should include primary care and written care plans should be formulated and recorded in the patient's notes.

Other avoidable factors that may increase risk of PP are sleep deprivation and high stress levels for the mother. Reduction of stressors and regular sleep patterns for new mothers should be targeted – particularly dealing with lack of sleep if labour had been prolonged. The needs of the woman's partner and wider family need to be considered in the management of PP acutely and in the long-term. Around 50% of postpartum episodes are the patient's first presentation of severe mental illness, and these episodes can be distressing to watch and deal with for their partners and family members [6]. Psychoeducation is important here for both parties; for the mother, to understand what she is going through and the future impact it may have on her life and for the family, in order to support the mother and care for the newborn.

Admission of women and their infants in mother baby units (MBU) should also be emphasised as it enhances mother-infant bonding, encourages breastfeeding, offers support for partners and family, and provides specific interventions for parenting. The repercussions of having few facilities offering joint admission include mothers refusing to be admitted for care, breastfeeding problems, diagnostic difficulties, longer hospital stays and increased responsibility of care of the newborn on partners and family members. After discharge, mothers should maintain close contact and be under regular review of their perinatal psychiatry teams.

Conclusion

Overall, childbirth is a trigger for postpartum psychosis episodes causing significant morbidity and mortality, with a risk of suicide for new mothers. PP is a psychiatric emergency and women at high risk need to be identified early in pregnancy and referred to perinatal specialist services for assessment as soon as possible. Identifying high-risk patients can lead to greater support and provision of needs to this cohort. Perinatal mental health is a specialised field of research that requires a

bigger evidence base for mental illnesses, especially PP, and their effective management. The risk factors for PP that have been evaluated in this essay require further research as they can be used for creating interventions and formulating individualised management plans for women with past medical or family history of PP.

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