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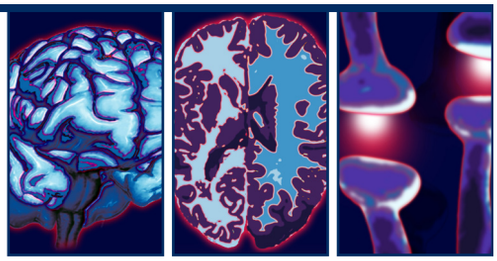

Postpartum hypomania: future perspective

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Practice points

- Hypomanic symptoms are common after childbirth and occur in at least one in ten women.
- It should not be assumed that women who are feeling elated, coping on little sleep and/or feeling like 'super-mum' are at low risk of requiring postpartum support. Hypomanic symptoms following childbirth are associated both with later postnatal depression and more severe puerperal psychosis.
- In women presenting with postnatal depression, postpartum hypomania and other bipolar spectrum indicators should be identified and treatment strategies modified accordingly. Further work is needed to determine if antecedent hypomania predicts a different clinical course.
- In order to progress work into postpartum hypomania, measurement techniques require further validation against clinical interview, the prediction of later depression and other variables of clinical relevance.

SUMMARY Hypomanic symptoms are common in the days following childbirth. A link between postnatal hypomania and later depression has been demonstrated, but further study of this common phenomenon is needed to fully understand the implications of these symptoms for: maternal attachment; mothering; and the prediction and treatment of later mood disorder. We review what is known regarding the prevalence and clinical relevance of postnatal hypomania and suggest areas for future research.

There are many assumptions regarding the way women 'should' feel in the days following childbirth. The archetype of motherhood is that of a domestic goddess; radiant and energetic, full of loving emotions and abreast of all the tasks necessary for a beautifully dressed baby and sparklingly clean house. The state of motherhood has been portrayed throughout the centuries as a near spiritual state of ultimate completion. While much research attention has been devoted to understanding why some women fail to possess this joyous state – in terms of postnatal depression (PND), the baby blues and disorders of maternal attachment – postpartum manic and hypomanic mood states have received considerably less attention.

Severe manic and psychotic illness show a dramatic increase in the weeks following childbirth [1,2]. A large case registry study in Denmark reported a 23-fold increase in admissions for bipolar disorder in the postpartum month compared to a fivefold increase in admissions for depression [2]. Childbirth is a potent precipitant of bipolar relapse, and is commonly related to the initial

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onset of bipolar disorder. Episodes of hypomania and milder forms of high mood also increase following childbirth [3,4], but have been largely unstudied, perhaps because of our views regarding how women 'should' feel after having a baby.

Measuring hypomania in the postpartum

The early postpartum period has long been recognized as a time of mood instability and researchers have reported elation and hypomanic-like symptoms occurring in newly delivered women (for a review see [3]). Research into the prevalence and implications of hypomanic episodes in the early postpartum period has been hampered by the lack of well-validated measurement tools (for a review see [5]). Clinical interview studies assessing hypomania have not been conducted; however, two self-report manic symptom scales have been used to investigate the prevalence of hypomania in the early postpartum period: the Highs Scale [6] and the Altman Mania Rating Scale (AMRS) [7].

The Highs Scale includes items adapted from the mania section of the Diagnostic and Statistical Manual of Mental Disorders, Third Edition, Revised (DSM-III-R): feeling more elated than usual, more talkative than usual, more active than usual, thoughts racing, feelings of being an especially important person, needing less sleep and problems with concentration due to attention jumping to unimportant things, each scored on a three-point severity scale [6]. The Highs Scale has been validated in the postpartum population against a clinician-rated diagnosis of mild mania on the Comprehensive Psychopathological Rating Scale in a small group of 16 women enriched by high scorers [6]. A stringent threshold for detecting hypomania (known as 'The Highs') of 7/8 was set. This threshold was somewhat higher than was optimal for identifying clinician-rated hypomania, but was found to have validity predicting increased irritability and risk of later depression [6]. The AMRS is a widely used self-report questionnaire for measuring manic symptoms in clinical populations and includes items assessing mood, self-confidence, sleep, speech and activity, each scored on a five-point severity scale [8]. The threshold for detecting hypomania has been well-validated outside of the postpartum period against clinical interview measures [7], but has not been validated specifically for postpartum use.

Studies using the Highs Scale find prevalence rates in the early postpartum range from 9.6% in Australia to up to 20.4% in Chile [4,6,9–12]. The AMRS correlates well with the Highs Scale, but the lower threshold for detecting hypomania used on this measure identifies 44% of postpartum women as having hypomanic episodes [5].

In line with findings in more severe forms of bipolar disorder, studies using the Highs Scale and the ARMS indicate that hypomanic symptoms are much more common in the early postpartum period than at other times. Using the Highs Scale and a longitudinal study design, we demonstrated an eightfold increase in cases in the early postpartum period compared with early pregnancy, with 1.2% of women scoring as cases at 12 weeks of pregnancy, 11.7% in the first postpartum week and 4.8% at 8 weeks postpartum [4]. A gradual decline in scores over the postpartum weeks has been reported in other studies using the Highs Scale [6,9,10]. Scores on the AMRS in the postpartum population are considerably higher than those found in control samples [5]. Scores in postpartum women were higher than those reported in patients with bipolar disorder in remission, but lower than at admission or discharge [5].

Table 1 shows that the prevalence of reported hypomania and hypomanic symptoms ranges between 9 and 44% across studies. Whilst there is good evidence that hypomanic symptoms increase in the early postpartum period, further validation of thresholds on self-report hypomania scales is required to accurately determine the prevalence of hypomania at this time. Hypomania is, even at nonpuerperal times, a difficult concept to measure. Its boundaries blur into normality at one end and mania at the other. In addition to validating thresholds against standardized diagnostic interview, predictive validity for PND, clinically significant mania or other clinically important areas of functioning should be examined.

Clinical applications

Postnatal hypomanic symptoms are unlikely to warrant pharmacological treatment, except in individuals with a previous history of bipolar disorder or puerperal psychosis. However, the ability to differentiate these symptoms from normal happiness after having a baby could have considerable clinical benefit. Whilst hypomanic symptoms themselves are often associated with short-term improvements in social and occupational functioning, they come to clinical attention because of the risk of associated depressions, the development of more severe mania or due to erratic behavior over time.

Table 1. The prevalence of postpartum hypomania and hypomanic symptoms across studies.

Author (year)	Sample size	Prevalence (%)	Time frame	Measurement tool	Country	Ref.
Handley *et al.* (1977)	18	17.0	Days 2–5	Hildreth Feelings Scale	UK	[27]
Ballinger *et al.* (1982)	34	29.0	Days 2–4	Visual Analogue Scale of Elation	UK	[29]
Hannah *et al.* (1993)	39 PND, 23 control	21.0, 9.0	Days 1–14	Retrospective RDC interview for hypomania	UK	[15]
Glover *et al.* (1994)	191	11.0	Day 5	Highs Scale, threshold of >7	UK	[6]
Glover *et al.* (1994)	258	10.5	Day 3	Highs Scale, threshold of >7	UK	[6]
Lane *et al.* (1997)	289	18.3	Day 3	Highs Scale, threshold of >7	Ireland	[10]
Hasegawa (2000)	119	13.5	Day 1	Highs Scale, threshold of ≥5	Japan	[9]
Webster *et al.* (2003)	1116	9.6	Day 3	Highs Scale, threshold of >7	Australia	[11]
Farias *et al.* (2007)	98	20.4	Day 2/3	Highs Scale-Spanish language version	Chile	[12]
Heron *et al.* (2009)	353	11.7	Day 3	Highs Scale, threshold of >7	UK	[4]
Smith and Heron (2010)	184	11.1, 44.1	Day 3	Highs Scale, threshold of >7, Altman Self-rated Mania Scale	UK	[5]

PND: Postnatal depression; RDC: Research diagnostic criteria.

Relationship with PND

Postnatal depression affects more than one in ten women and causes a great deal of suffering to women and their families [13]. Women who experience postnatal hypomanic symptoms have a high risk of later depression [6,10,14–16]. Glover *et al.* demonstrated that 50% of women with the Highs compared with 18% of women without psychopathology in the first postpartum week scored 10 or above on the Edinburgh Postnatal Depression Scale (EPDS) at 6 weeks postpartum [6]. Using a more stringent EPDS threshold of 13, we found that 25% of women with the Highs compared with 5.2% of women without psychopathology had depressive symptoms at 8 weeks postpartum. We found an optimum Highs Scale threshold for predicting depression of scores of 6 or more [16], compared with scores of 8 or more found by Glover *et al.* [6]. A link between early hypomania and PND was also demonstrated in a study using a semi-structured interview to retrospectively identify episodes of hypomania. In women with new-onset PND versus controls, Hannah and colleagues found that eight out of 39 women with PND reported experiencing hypomania in the early postpartum compared with only two out of 23 control women [15].

Based on these, albeit small, studies, we may estimate that a quarter to a fifth of women who develop PND experience antecedent hypomania. This has implications both for the identification of women at risk of PND and the management of PND.

Prediction of PND

Identifying postnatal hypomanic symptoms might enable us to predict women at risk of depression who do not present with low mood in the early postpartum period. The symptom profile of the Highs (e.g., feeling elated, coping on little sleep, feeling like 'super-mum') is such that healthcare professionals could incorrectly assume women with hypomanic symptoms are coping particularly well with the demands of early motherhood and are at a particularly low risk of PND. In the early postpartum hypomanic symptoms could offer a clinically useful marker of risk of later depression.

The advantage of incorporating the Highs Scale into risk factor models to improve the prediction of those at risk of PND is less clear. Although studies show a relationship between early postpartum hypomanic symptoms and later PND, the one study conducted to date found that, when used in a predictive index alongside a range of other known risk factors for postnatal depressed mood, the Highs Scale did not add significantly to predictive power [11]. The close relationship between the Highs and other known risk factors for depression might explain this finding, for example, many women with the Highs also report a personal history of depression [16] and concurrent depressive (or 'mixed affective') symptoms in the postpartum [6,10,16].

Treatment of PND

There are issues surrounding the usefulness of antidepressant monotherapy in bipolar spectrum depression [101]: PND preceded by hypomanic symptoms might require different treatment approaches to unipolar PND. Research conducted into affective disorders that occur outside of the postpartum period, suggest that unipolar depression differs from bipolar spectrum depression in

terms of illness course, risk of suicide and, importantly, in the treatments required [17,18]. There is emerging evidence that antidepressants given alone can worsen the course of depression, triggering mood switching, mixed episodes, agitation, rapid cycling and worsening suicidal ideation [17,19,101]. Recent NICE bipolar disorder guidelines recommend: adjunctive mood stabilizers; antidepressants with low switch rates; close monitoring; and short- rather than long-term antidepressant use [101]. Given the high rate of antecedent hypomania among those with PND, further investigation is urgently required to determine if there are differences in illness course or treatment response in PND with and without antecedent hypomania.

■ Relationship with postpartum psychosis

It is important to note that women who develop severe episodes of postpartum psychosis (puerperal psychosis) frequently report hypomanic symptoms in the early postpartum [20,21]. Although these episodes are uncommon in the general population, occurring after one to two out of 1000 deliveries, symptoms escalate rapidly and should be regarded as a psychiatric emergency. Close vigilance to early hypomanic symptoms would allow health professionals to quickly identify escalation. Women with a history of bipolar disorder or postpartum psychosis are at particular risk of severe illness in the postpartum period. These women should be referred during pregnancy to specialist perinatal mental health services and hypomanic symptoms in the early postpartum period should be managed as signs of imminent relapse.

■ Attachment & mothering

Hypomanic symptoms outside of the postpartum period have been linked with risky behaviors, high use of health services, a high lifetime risk of suicide, as well as more positive traits, such as increased sociability, creativity, expressiveness and improvements in motivational functioning. Some studies of mothers with bipolar disorder report a higher rate of 'disorganized attachment' compared with those with recurrent depression [22]. However, puerperal mania, in contrast to PND, has been associated with long-term security in the attachment relationship [23]. In 1985, Brinsmead hypothesized that hormonal changes resulting in euphoria at delivery might play a role in promoting maternal–infant attachment, at the expense of maternal depression some weeks later [24]. In support of this hypothesis, Taylor and colleagues found that women with the Highs had improved scores on a brief mother-to-infant attachment scale and found that this may persist in the long term [25].

Maternal sensitivity and consistency of caregiving are cornerstones of secure attachment according to the attachment theory; thus, one might expect that hypomanic symptoms would impact upon attachment, especially when combined with depressive symptoms. The preliminary evidence indicates that the opposite could be the case in the long term, in both severe puerperal bipolar disorder and milder puerperal hypomanic states. Further qualitative and quantitative investigation is needed to confirm these findings and to examine the impact of severity of high mood symptoms and concurrent/subsequent low mood symptoms on attachment and mothering.

Understanding the nature of the puerperal trigger

Studying the risk factors and etiology of mild postnatal hypomanic symptoms has the potential to help shed light on the puerperal triggering of more severe bipolar episodes [3,4,20]. The Highs have similar symptoms, onset timing and show a similar postpartum increase to that found in more severe forms of puerperal psychosis [20,21]. Preliminary studies indicate that risk factors also overlap. Primiparity [9,16] and a personal and family history of depression and bipolarity are associated with postnatal hypomanic symptoms [16]. Episodes of puerperal psychosis, whilst common in bipolar women, are relatively rare in the population at large, and therefore the large systematically ascertained sample sizes needed to explore the role of genetic and environmental risk factors in high mood are difficult to achieve. Samples of milder forms of high mood would be much easier to achieve and prospectively follow up and could help us understand and modify the risk of severe forms of high mood in women with bipolar disorder.

The increased rates after childbirth could indicate the involvement of: fluctuations in reproductive hormones that occur at term, such as estrogen and progesterone; sleep disruption; obstetric medications; or psychological processes and stressors at term. There have been few studies thus far that have used the concept of puerperal elation in hormonal/biological studies and therefore findings are sparse and preliminary. In the women with the Highs identified by Glover *et al.*, lower serum and urinary cortisol was found [26]. The picture is not clear, however, as Handley *et al.* found an increase in serum cortisol in a small sample of women with

postpartum 'euphoria', but this finding was not replicated in further work [27,28]. Using a Visual Analogue Scale of Elation, Ballinger *et al.* demonstrated that ten out of 34 women had an upswing in mood between days 2 and 4 postpartum [29]. These women were distinct in terms of a number of biochemical markers, including increased output of cAMP and, the authors suggest, showed a similar profile to that found in short-cycle manic depressive illness.

The theory originally proposed by Brinsmead that hormonally regulated euphoria at delivery may promote attachment at the expense of later depression [24], if supported, would lead to an interesting hypothesis regarding postnatal-onset bipolarity. Anything that acts to promote coping skills and mothering behavior in the early postpartum period, perhaps joy, increased activity, feeling like 'super-mum' and managing on little sleep, would be under strong evolutionary pressure. If any biological processes were involved in promoting mild forms of high mood and positive mother–infant bonding, these systems would also be good candidates for a role in bipolar affective puerperal psychosis and affective disorder more generally. A relatively large amount is known regarding the hormonal process of maternal attachment in nonhuman animals and these would perhaps be appropriate first-choice candidates for study.

Mood disorders tend to be heterogeneous in terms of etiology and limiting this heterogeneity can help in the search for environmental and genetic causes. Studies examining the prevalence of depression across the perinatal period have reported mixed results, with most epidemiological studies reporting a trend to lower rates of depression from pregnancy to the postpartum period in the population as a whole [4,13,30–32]. Despite this, there is good evidence that a subgroup of women are vulnerable to the puerperal triggering of depressed mood [30,33–35]. Puerperal psychosis has been used as a subphenotype of bipolar disorder with promising results [36]. It has been argued that puerperal psychosis represents a more familial form of bipolar disorder and that puerperal triggering runs in families [37,38]. Depression following childbirth has a complex array of social, psychological and biological causes. PND with antecedent hypomania might represent a useful subphenotype, allowing us a better chance of identifying genes and other factors involved in mood disorder triggered by childbirth.

Future perspective

Hypomanic symptoms are commonly experienced in the postpartum and the study of these symptoms shows promise in terms of increasing our understanding of childbirth-triggered mood symptoms. The almost exclusive focus on unipolar depression has failed to shed light on the specific relationship between childbirth and mental illness; the study of the bipolar spectrum may improve our understanding of mood disorders triggered by childbirth. A significant proportion of women with PND are likely to experience bipolar spectrum symptoms. This has clinical relevance for determining the types of management approaches that may be effective.

Further work is required to determine what constitutes 'a case' of postnatal hypomania. Research should aim to understand the qualitative experience, risk factors and correlates of postnatal hypomania and validate scales against diagnostic interview, later depression and other variables of clinical importance. Validating measures is time consuming, costly and practical difficulties exist in determining when, where and how to conduct clinical interviews with newly delivered mothers. However, work in this area has great potential to increase our clinical understanding of PND and the nature of the postpartum triggering of mood disorders.

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