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Recent epidemiologic studies have found that most patients with mental illness are seen exclusively in primary care medicine. These patients often present with medically unexplained somatic symptoms and utilize at least twice as many health care visits as controls. There has been an exponential growth in studies in this interface between primary care and psychiatry in the last 10 years. This special section, edited by **Jürgen Unutzer, M.D.,** will publish informative research articles that address primary care-psychiatric issues.

Risk factors for early postpartum depressive symptoms☆

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Abstract

Objective: Postpartum depressive disorders are common and symptoms may appear as early as the first 2 weeks postpartum. Data regarding hormone-related risk factors for depressive symptoms occurring in the very early postpartum period are scarce and may be of importance in identifying serious postpartum illness. We examined the association between the reported history of psychiatric symptoms of possible hormonal etiology and very early postpartum depressive symptoms.
Methods: All women ($n=1800$) in a general hospital maternity ward were assessed during the first 3 days after parturition for potential risk factors for postpartum depressive disorders by a self-reported questionnaire and for present mood symptoms (Edinburgh Postnatal Depression Scale, EPDS). The associations between potential risk factors and postpartum depressive symptoms were analysed.
Results: The incidence of women with an EPDS ≥ 10 was 6.8% (88/1286). Significant risk factors for early postpartum depressive symptoms were a history of mental illness including past postpartum depression (PPD), premenstrual dysphoric disorder (PMDD), and mood symptoms during the third trimester.
Conclusion: In accordance with other studies, a history of depression was found to be a risk factor for early postpartum mood symptoms. An association was also found between some risk factors of possible hormone-related etiology such as PMDD and third trimester mood symptoms and early postpartum mood symptoms. As such, early postpartum symptoms may indicate vulnerability to subsequent PPD; it may be of importance to assess these risk factors and mood immediately after parturition. A prospective study is needed to determine which of these risk factors is associated with progression to PPD and which resolves as the blues.

Keywords: Risk factors; Postpartum; Depression; PMDD; Mood

1. Introduction

The prevalence of postpartum depressive disorders is 10–15% for depression (major or minor) and as high as 50–80% for the "blues" [1,2]. Postpartum depression (PPD) is sometimes associated with severe emotional suffering and may involve actual risk to the mother and baby [3,4]. Furthermore, through interference with attachment processes and possibly other factors, postpartum depressive disorders have a negative effect on the development of the baby [5]. Despite their commonness, up to 50% of the cases of postpartum disorders go undiagnosed or treated [6]. While most cases of PPD develop after the first 2 weeks postpartum, there is evidence that depressive symptomatology increases as early as the first 2 weeks postpartum [7], and that in women at risk, a considerable percentage may develop PPD during this period [8]. Thus, knowledge of risk factors that predispose women to early postpartum depressive symptoms may enhance early identification of those who require professional help for prevention or successful early treatment [9].

A number of risk factors have been associated with the development of PPD. These findings are not always conclusive and are reviewed elsewhere (e.g., Refs. [1,10,11]).

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While the blues is a well-established risk factor for PPD [4,11,12,13], little data exist regarding other syndromes that may reflect individual hormonal sensitivity such as premenstrual dysphoric disorder (PMDD) [4,14], psychiatric symptoms during pregnancy [15,16], mood instability secondary to oral contraceptives [17,18], or mood instability at puberty [19,20]. Despite the paucity of data, researchers in the field have hypothesized that some women have emotional and physical sensitivity during such times of hormonal changes, making them prone to the development of depressive symptoms during vulnerable periods [20–22]. Risk factors related to personal history of mental illness such as affective disorder [23,24], PPD in the past [32] or a family history of depression [3,4] have been consistently found to be important risk factors for PPD.

In the present study, we used a retrospective design to examine possible risk factors for the development of early postpartum depressive symptoms, with an emphasis on factors that may reflect individual variations of hormonal sensitivity.

2. Methods

2.1. Study population

All women admitted to the Rambam Medical Center's (Haifa, Israel) two maternity wards during the years 1998–1999 were consecutively assessed for this study. Inclusion criteria were fluency in Hebrew and willingness to sign the informed consent. Two research assistants approached all newly admitted women to the two maternity wards 1–3 days postpartum. Compliant eligible women completed a questionnaire containing information regarding potential risk factors for PPD. Present mood was assessed with the Hebrew version of the Edinburgh Postnatal Depression Scale (EPDS) [25] and self-report questions regarding their mood.

Twenty-eight percent of the eligible women could not be assessed for technical reasons such as early discharge, continuous guest visits, medical procedures, etc. Only 1% of the women refused to participate. A total of 1800 women were administered the questionnaire after providing a written informed consent. Of these, 71% ($n=1286$) completed both the full questionnaire and the EPDS and were included in the analyses.

2.2. Risk factor questionnaire

The risk factor questionnaire contained the following information: (1) General demographic background. (2) Description of the present and past pregnancies. (3) Personal (major depression and other major diagnoses) and first-degree family psychiatric history. (4) past hormone-related mood symptoms: (a) Mood instability during puberty, considered positive only if causing severe distress. (b) PMDD, based on *DSM-IV* criteria, considered positive only if there were severe premenstrual emotional symptoms of sadness, irritability, mood lability or anxiety that occurred during most cycles, starting in the luteal phase and ending with menses and causing considerable distress or functional impairment. (c) Emotional reactivity to oral contraceptives, considered positive if women reported of sadness, irritability, mood lability or anxiety while taking oral contraceptives leading to the termination of treatment. (d) Sadness, irritability, mood lability or anxiety occurring during the third trimester of the present pregnancy. (5) Present mood instability or depressive symptoms since parturition.

2.3. Edinburgh Postnatal Depression Scale

The EPDS is a 10-item questionnaire developed by Cox et al. [26] to detect PPD. The sum of the EPDS correlates with the severity of depression [27], and a score of 10 or above indicates high risk for developing PPD [23,28]. The EPDS has been translated to and validated in many languages, including validation in Hebrew [25]. While the EPDS was developed as a tool to detect PPD (not in the immediate postpartum period), its use has widened and it is now often used as a screening tool as early as the first few days of the postpartum period [10,11,29,30].

2.4. Statistical analysis

All women were divided into two groups: the symptomatic group with an EPDS score ≥ 10 and the asymptomatic group with EPDS scores <10. To ascertain that the study and comparison groups were indeed well matched, a set of *t*-tests (for continuous variables) and χ^2 analyses (for discrete variables) were used. The relationship between the various risk factors and EPDS score was assessed using a set of χ^2 analyses. One-way ANOVA was used for the analysis of continuous variables. We also applied a hierarchical regression model to the various risk factors to identify the optimal model for prediction of postpartum outcome.

3. Results

The average age of the study population was 30.6 (S.D.=5.7). Most of the study population were married

Table 1
The association between reported risk factors and EPDS scores of 10 and above during the early postpartum period

Past history risk factors		*N*	EPDS ≥10	*P*[a]
Mood symptoms at 3rd trimester	Yes	325	22 (6.8%)	<.001
	No	908	14 (1.5%)	.015
PMDD	Yes	273	14 (5.1%)	
	No	971	22 (2.3%)	
Postpartum depression	Yes	13	5 (38.5%)	<.001
	No	1034	23 (2.2%)	
Other psychiatric illness	Yes	15	3 (20%)	.008
	No	1213	23 (2.7%)	
Affective disorders in family	Yes	141	8 (5.7%)	.048
	No	939	24 (2.6%)	
Major depression	Yes	24	2 (8.3%)	.150
	No	1196	34 (2.8%)	

[a] Significance calculated using χ^2 tests.