

Clinical prediction guide

An antenatal index predicted postpartum depression with high sensitivity and moderate specificity

Nielsen Forman D, Videbech P, Hedegaard M, et al. *Postpartum depression: identification of women at risk*. *BJOG* 2000 Oct;107:1210-7.

QUESTION: Are there demographic, perinatal, and psychosocial risk factors that can be used to develop a predictive index for postpartum depression?

Design

2 cohort studies: 1 to identify the predictors (derivation cohort) and 1 to validate their predictive ability (validation cohort).

Setting

Antenatal care clinic and delivery ward in a university hospital in Denmark.

Patients

6790 Danish speaking women (mean age 30 y) who attended an antenatal programme for a second trimester examination and who gave birth between 1 January 1994 and 31 December 1995 formed the derivation cohort. 528 women enrolled in the antenatal programme in the 4 months immediately before and after the study period formed the validation cohort.

Description of prediction guide

2 predictive indices were considered: 1 index involving only antenatal risk factors, and the other involving both antenatal and perinatal risk factors. Potential risk factors were grouped into sociodemographic characteristics, psychopathological and social status, and perinatal events. The risk index was defined as a sum of these risk factors weighted by the estimated regression coefficients. The strongest antenatal predictors were psychological distress in late pregnancy measured by the General Health Questionnaire (odds ratio [OR] 6.3, 95% CI 4.4 to 9.1 for the most distressed group), perceived social isolation during pregnancy (OR 3.6, CI 1.9 to 7.0), parity >2 (OR 3.8, CI 1.8 to 8.0), and a history of psychiatric disease before pregnancy (OR 2.1, CI 1.4 to 3.2). The predictive ability of the antenatal index was not improved by incorporating perinatal events.

Main outcome measure

Diagnosis of postpartum depression 4 months after giving birth assessed using a threshold score of 12/13 on the Edinburgh Postnatal Depression Scale (EPDS).

Main results

In the derivation cohort, 281 women (out of 5091 who had complete data, 5.5%) had postpartum depression. The table shows the sensitivity, specificity, and likelihood

Test characteristics of the antenatal index in predicting postpartum depression using a cut point score of 12/13 on the Edinburgh Postnatal Depression Scale

Index	Sensitivity	Specificity	+LR*	-LR*
Antenatal	79%	50%	1.58	0.42

*+LR=positive likelihood ratio, -LR=negative likelihood ratio.

ratios for the antenatal index tested in the validation cohort. The maximum positive predictive value of the antenatal index was 0.30 at a cut point score of 12/13 on the EPDS.

Conclusion

An antenatal index predicted postpartum depression with high sensitivity and moderate specificity.

COMMENTARY

Forman *et al* cite numerous studies of postpartum depression that have reported prevalence rates of 8% to 15%. In their study and in a study of Chinese women in Hong Kong,¹ the prevalence rate was lower at 5.5%. Authors of both studies indicate that the low prevalence may be because of the timing of the screening and low response rate from women, and they caution readers that non-respondents may actually have a higher frequency of risk factors for developing postpartum depression.

Strengths of the study by Forman *et al* include the prospective identification of potential risk factors, the use of a standardised, validated measure of postpartum depression (EPDS), and the testing of the predictive power of identified risk factors on a separate sample from that used to derive the predictive variables. The study is limited by the fact that only 78% of the sample completed all questionnaires and non-respondents had significantly higher frequencies of psychosocial risk factors.

The antenatal index shows a strong association between antenatal psychological distress and lack of social support and postpartum depression, which is consistent with other studies.² Although the ability of the index to correctly detect postpartum depression is quite high (sensitivity of 79%), its ability to correctly identify the absence of postpartum depression is only moderate (specificity of 50%). More work needs to be done to develop a highly sensitive and specific tool of predictors of postpartum depression.

Forman *et al* conclude that with an estimated prevalence of 5.5%, approximately 1 of 3 women with severe psychological problems and social isolation in late pregnancy will develop postpartum depression. Postpartum depression has a substantial effect on the family unit as well as the women themselves. Through screening for psychological distress in late pregnancy, social isolation antenatally, parity >2, and history of psychiatric disease before pregnancy, nurses can play an important part in the early detection and monitoring of those at risk and in ensuring that those in need obtain early treatment.

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1 Lee DT, Yip SK, Chiu HF, et al. *Br J Psychiatry* 1998;172:433-7.
2 Beck CT. *Nurs Res* 1996;45:297-303.

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