ARCHIVES OF DISEASE IN CHILDHOOD

The Journal of the Royal College of Paediatrics and Child Health

Annotations

Prediction, detection, and treatment of postnatal depression

Epidemiological studies of puerperal samples have consistently revealed the prevalence of non-psychotic major depressive disorder in the early weeks after delivery to be around 10%.¹ Although this rate does not, in fact, represent an elevation over the non-postpartum base rate,^{2–5} the inception rate for depression does appear to be raised in the first three months postpartum compared with the following nine months.^{5,6} There has been considerable clinical and research attention paid to postpartum depression in recent years, in part because it occurs at a particularly important time in a woman's life: the early postpartum period is the time when the foundation of the mother-child relationship is laid. Indeed, a large body of evidence attests to the fact that postpartum depression does have an adverse impact on the progress of this important early period. Thus, compared with well mothers, mothers with postpartum depression report significantly higher rates of problems with infant feeding, crying and sleeping, as well as more problems with their relationship with their infant.⁷ Also, ratings of the quality of the early mother-infant relationship reveal it to be profoundly affected by the presence of postpartum depression.⁸ Furthermore, longitudinal studies have revealed that the nature of the early mother-infant relationship in the context of postpartum depression is predictive of the course of child cognitive, emotional, and social development.⁸ For these reasons, there has been a substantial research effort in recent years to elucidate aetiological factors, to develop methods of prediction, to refine a system for reliable detection, and to develop and evaluate methods of treatment which can be delivered widely within the health service.

Aetiology

There is scant evidence for a biological basis to postpartum depression.¹ Although the presence of the 'maternity blues' has been found in a number of studies to be related to the subsequent development of postpartum depression, and this association is consistent with hormonal aetiological factors, the basis of the association remains obscure.¹ Gynaecological and obstetric factors have been implicated as risk factors in some reports but not in others. Two studies have found an interesting interaction that suggests that obstetric factors may be important in a vulnerable subgroup of women. Murray and Cartwright found that it was only among those with a previous history of depressive

disorder that delivery complications were associated with postnatal depression⁹; and O'Hara and colleagues found that the joint presence of depression during pregnancy and higher levels of obstetric stressors was a significant risk factor for postpartum depression.¹⁰

The consistent finding of the epidemiological studies carried out to date is that the major factors of aetiological importance are largely of a social nature.^{1,11,12} So, the occurrence of stressful life events in general and unemployment in particular, the presence of marital conflict, and the general absence of personal support from spouse, family and friends, have all consistently been found to raise the risk of depression in the postpartum period.

A psychiatric history is also commonly reported to be a risk factor for postnatal depression, especially a history of depressive disorder. This association has recently been clarified in a study which followed up over five years a cohort of women who had had a postpartum depression as a recurrence of previous non-postpartum mood disorder and a cohort for whom the postpartum depression was their first experience of affective disturbance.¹³ The former group (that is 'the recurrence group') were found to be at raised risk for subsequent non-postpartum depression, but not to be at risk for depression following a subsequent delivery. Conversely, the latter group (that is 'the first onset group') were found to be at raised risk for subsequent postpartum depression but not for subsequent non-postpartum depression. This finding, if replicated, suggests that for a subgroup of those with postpartum depression the puerperium carries specific risk, for either biological reasons or psychological ones surrounding the demands of infant care.

Prediction

Progress in the development of a predictive index for postpartum depression has been hampered by two factors. First, the epidemiological studies from which information on predictive variables have been identified have involved relatively small samples: even when samples of several hundred women have been studied, involving large numbers of mental state assessments, the number of cases of depression identified has been relatively small. Second, although several antenatal variables have been found to be systematically related to the development of postpartum depression, as outlined above, the individual and interac-

tive relationships are relatively weak. Predictive studies involving rather few subjects are, therefore, inevitably going to prove unsuccessful.¹² Indeed, the largest scale prospective predictive study to be carried out revealed that such factors as the absence of social support and a previous history of depression, the most reliable predictors of postpartum depression, do no more than double the odds over the base rate risk.¹⁴ Clearly the positive predictive value of such variables is low. It is therefore unsurprising that, even when a predictive index has been derived from a sample of several thousand women, it is of limited clinical utility: at a cut off score with a sensitivity of 75% the specificity is only 52%; and at a cut off score with a specificity of 75% the sensitivity is only 44%.¹⁴

Preliminary evidence suggests that the prediction of postpartum depression could be improved if account were taken of certain postpartum factors. Thus, in a recent study that examined the impact of neonatal factors on the course of maternal mood¹⁵ it was found that, over and above the predictive contribution of antenatal factors, both a high 'maternity blues' score and infant irritability and poor motor behaviour (as measured by the neonatal behavioural assessment scale¹⁶) significantly predicted the onset of postnatal depression. Indeed, a difference in blues scores of 10 points (the interquartile range in the sample) on the index used¹⁷ trebled the odds of depression, as did having an infant whose irritability or motor ratings placed them amongst the poorest quartile. These findings suggest that the positive predictive value of the critical antenatal factors could be considerably augmented by taking account of both the 'blues' and infant temperamental features. This remains to be demonstrated empirically.

Detection

Postpartum depression is frequently missed by the primary care team. In a recent study in Cambridge almost half of those independently identified as depressed were not detected as such by their health visitor,⁷ a finding which replicates that of a study carried out 10 years earlier.¹⁸ In fact the detection of postnatal depression does not present any special problem. As the clinical features of the disorder are not distinctive,¹ its assessment is straightforward. Indeed, a simple brief self report measure, the Edinburgh postnatal depression scale, or EPDS,¹⁹ has been developed as a screening device.¹⁹ It has sound psychometric properties, and in a large community study has been shown (with an 11/12 cut off) to have a specificity of 92.5%, a sensitivity of 88%, and a positive predictive value of 35.1% for major depression.²⁰ The questionnaire is easy to administer, simple to interpret, and could readily be incorporated within the routine services provided to all postpartum women. Sensitive clinical inquiry in high scorers would be sufficient to confirm the presence of depression.

Treatment

There has been little systematic research on the pharmacological treatment of postnatal depression. Although progesterone treatment has been advocated, there has been no systematic evaluation of its clinical impact. The efficacy of oestrogen treatment has, however, recently been evaluated.²¹ In a sample with severe and chronic postpartum depression (that is, onset within 12 weeks postpartum and depression up to 18 months postpartum), placebo treatment was compared with transdermal oestradiol. Depression improved in both groups but significantly more so for those receiving oestrogen. The appropriateness of this form of treatment in more typical samples of postnatally depressed women remains to be evaluated.

There has been one controlled trial of an antidepressant medication. Appleby and colleagues, in a factorial design involving the use of fluoxetine or placebo in combination with either one or six counselling sessions, demonstrated an impressive antidepressant effect over a three month period for both the active drug and the psychological treatment.²² However, there was no additive effect of the two treatments and the drug treatment was not superior to the psychological treatment. Given that more than half of those invited to take part in the study refused, mainly because of 'reluctance to take the medication', the role of fluoxetine, or indeed any other antidepressant medication, is likely to be extremely limited.

There have been two controlled trials of the psychological treatment of postpartum depression. Holden and her colleagues found considerable improvement in maternal mood in women treated over eight weekly sessions by health visitors trained in non-directive counselling, with no improvement evident in the control group who received routine primary care.²³ Similarly, Cooper and Murray found three brief home based psychological interventions (including a non-directive counselling condition) delivered to a community sample of women identified with postpartum depression, significantly (and equivalently) to speed up the rate of spontaneous remission.²⁴ They also found that treatment was associated with marked improvement in maternal reports of infant problems, both immediately after treatment (four to five months postpartum) as well as at a follow up at 18 months postpartum. In addition, early remission from depression, itself related to treatment, was associated with a reduced rate of insecure infant attachment at 18 months. Similar benefits of treating postpartum depression have recently been reported in a study of health visitor practice.⁷ Training was provided to all the health visitors working in one NHS sector and a cohort study conducted, with assessments made of the health visitors' clientele before their training and then during a post-training period. Significant benefits of treatment were apparent in terms of both maternal mood and the impact on maternal reports of the quality of the mother-infant relationship.

Conclusion

Postnatal depression is a common condition that has a significant impact on family life. In particular, it has a deleterious effect on women's parenting capacities which in turn has an adverse impact on the course of infant cognitive and emotional developmental progress. The significant aetiological factors are largely of a social and psychological nature. Their collective predictive power is not strong and the clinical utility of any antenatal index is likely to be somewhat limited. The addition of certain maternal and neonatal infant factors could substantially improve prediction but this remains to be empirically demonstrated. Once postnatal depression has occurred its detection is relatively simply achieved by following the administration of a brief self report questionnaire with sensitive clinical inquiry. Postnatal depression responds well to supportive counselling procedures with rapid and substantial improvement in maternal mood as well as benefits in terms of maternal experiences of infant problems. There is a need for the improvement of predictive indices so that preventive interventions can be developed, evaluated, and delivered within the health service.

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Effects of postnatal depression on infant development

There is good evidence that parental psychiatric disorder has a deleterious effect on child development. Rutter has outlined a number of possible reasons for this.¹ First, there may be a direct pernicious impact on the child of exposure to the parental disorder. Second, there may be an indirect impact via the effect of the parental disorder on interpersonal behaviour in general and parenting in particular. Finally, the impact may be via third factor variables, such as the social adversity commonly associated with psychiatric disorder, or genetic or constitutional factors. Depression arising in the postnatal period could have an impact on infant development via each of these causal pathways. The infant's extreme dependency on their caretaker, their sensitivity to interpersonal contacts,² and the fact that, in the great majority of cases, the mother constitutes the infant's primary environment in the first postnatal months, make the question of the impact of depression occurring at this time one of particular importance. An account is given below of the evidence implicating postnatal depression in adverse infant outcome. This evidence is then examined in the light of the possible causal frameworks outlined above.

A number of studies have examined the 1 to 2 year old infants of mothers who have had a postnatal depression.³⁻⁸ These studies have generally found an association between early maternal depression and adverse cognitive and emotional infant development.

Cognitive development

Two studies have reported on the cognitive outcome of 12 to 18 month old infants of mothers who had had a postnatal depression. Lyons-Ruth *et al*, in a comparison of American mothers and infants who had been referred to an infant intervention service with matched community controls,³ found that increased levels of maternal depression were significantly related at 1 year to poorer infant mental and motor development as assessed by the Bayley scales.⁹ This association was still present when maternal IQ had been controlled. Similarly, Murray, in a comparison of the development of a British community sample of full term healthy infants of primiparous women who had either

remained well or who had been depressed postnatally, found a significant difference between the two groups of infants in terms of a number of indices of cognitive development.^{5, 6} Thus, at an 18 month follow up, compared with the infants of postnatally well mothers, infants of mothers who had had postnatal depression were significantly more likely to fail on stage V of Piaget's object permanence task, a key measure of the infant's capacity for mental representation; and on the Bayley scales of mental development, an interaction was found between maternal mental state and infant gender: the boys of mothers who had had postpartum depression performed particularly poorly.

Emotional development

The impact of postnatal depression on the emotional development of infants has been studied in three ways.

(1) An examination has been made of the quality of the *infant's interpersonal functioning* when in direct communicative engagement with the mother. Stein and colleagues made standardised ratings of the quality of mother-infant interactions in free and structured play in the home in a community sample of mothers who had had a postnatal depression and their 19 months old infants, together with well controls.⁴ Compared with the latter group, the children of the index mothers showed less affective sharing, a lower rate of overall interactive behaviour, less concentration, and more negative responses. These infants also showed less sociability to a stranger.

(2) Assessments have been made of the *quality of infant attachment* (assessed by means of the Ainsworth strange situation procedure¹⁰). Four longitudinal studies have been carried out on postpartum samples where systematic assessment of infant attachment has been made. Lyons-Ruth and colleagues found an association between insecure attachment at 12 months and high levels of maternal depression.³ Similarly, Murray found a significant association between the occurrence of depression in the postnatal period and insecurity of attachment at 18 months postpartum, with avoidance being the prominent insecure attachment profile.⁵ This association between the postnatal