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Prospective Study Into Puerperal Depression

By KATHARINA DALTON

Summary

A prospective study of mood changes through pregnancy and puerperium was undertaken by a research group centred on the North Middlesex Hospital, Edmonton, London. Data collected from 189 women revealed an evolution of mood changes in those who later developed puerperal depression, which was characterized by anxiety at the first ante-natal visit, elation during later pregnancy and depression in the puerperium. The findings were in agreement with other workers in this field. The arguments in favour of a hormonal aetiology of puerperal depression are presented.

Method

The research group consisted of general practitioner obstetricians and clinic doctors assisted by a consultant psychiatrist. All patients for whom the doctors agreed to undertake full ante-natal and post-natal care were entered into the scheme. The doctor completed a 'First Form' for each patient giving particulars of age, occupation, general health and previous psychiatric breakdowns in patients and family, and whether she was placid, normal or anxious. At the first and each subsequent ante-natal visit a further form was completed giving particulars of the presence or absence of oedema, blood pressure and albumin, whether the woman was complaining of headaches, bachache, tiredness, irritability, nausea, vomiting or insomnia, and whether she was depressed, elated or anxious. At the eighth month her wishes as to breast-feeding were entered on the form. After delivery, post-natal forms were completed at the 10th day, 6th week and 6th month. On completion of each form it was forwarded direct to the research secretary at the hospital, thus preventing a doctor from referring to the symptoms or mood present at a previous visit. In the final analysis, the women included were those with a minimum of 7 completed ante-natal forms (of which at least one was before the 16th week, one between the 17th and 28th week, and one after the 28th week) and 3 completed post-natal forms.

The survey was closed after 500 women had been entered, but, as shown in Table I, complete data for analysis were only available for 189 women. There were 23 miscarriages. During the first and second trimester 23 and 58 women respectively were lost to the survey because of removal from the doctor or the district. The greatest loss from the survey occurred in women who had been followed

Table I

Distribution of 500 women entered into survey

Completed ante-natal forms:	
Completed post-natal forms ..	189
Uncompleted post-natal forms ..	6
Miscarriages	23
Uncompleted ante-natal forms:	
Before 16th week	23
Between 17th and 28th week ..	58
After 28th week	201
Total	500

until the 28th week: a few moved from the district but the majority were lost through their ante-natal care being undertaken by the hospital. Most patients in this series were booked for hospital confinement, either for the full eight days or, as planned, early discharge after labour. Hospital-booked patients were seen in hospital at about the 30th week, when if no abnormality was detected the patient was returned to her general practitioner or clinic doctor for subsequent ante-natal care. However, if even a small abnormality was suspected or detected the subsequent ante-natal care was continued by the hospital. This was largely responsible for the loss of 201 women with uncompleted ante-natal forms after the 28th week. Nevertheless, the 189 women whose data were complete and available for analysis represented a homogeneous group of women who were medically and obstetrically normal and in particular did not have any signs suggestive of toxaemia, disproportion or Rhesus antibodies. Also, these 189 women were all married and remained at the same address and attended the same doctor for at least 15 months; thus they may be considered as having had reasonable stability of environment.

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Results

Of the 189 women in the survey, 14 developed a puerperal depression of sufficient severity to require out-patient psychiatric help or drug therapy from their general practitioner. The psychiatrist saw 11 of these 14 women after the sixth month for his evaluation and confirmation of diagnosis. No woman required hospital admission for her psychiatric illness.

Table II analyses factors in which women developing puerperal depression differed from normal women. At their first ante-natal visit the puerperal depressives were more anxious, but during the course of the pregnancy they became more elated and had fewer pregnancy symptoms. These differences were all statistically significant at the 5 per cent level of confidence (Table IIA). At the eighth month the puerperal depressives showed a marked keenness to breast-feed, none were antagonistic to lactation, and more were successfully breast-feeding at two weeks. Other marked differences, not statistically significant, noticed in puerperal depressives were that labour tended to last longer, to have more complications, and to have been considered difficult (Table IIB). On the other hand, there was a marked similarity between normal women and puerperal depressives in such factors as welcoming pregnancy, previous psychiatric illness, the incidence of pregnancy symptoms of depression, irritability, tiredness, headache, backache, nausea and vomiting (Table IIC).

During the puerperium a further 48 women were found to be mildly or temporarily depressed, for which they did not require treatment. Their incidence of 34 per cent may be compared with the 50 per cent of women suffering from the 'blues' in Pitt's study (1968). These women who later suffered from puerperal blues had, during pregnancy, similar characteristics to the normal women, with the same distribution of pregnancy symptoms, elation, anxiety, keenness to breast-feed, and also the same incidence of long labours, complicated and difficult labours. However, these two groups did differ in regard to their baby. A significantly higher proportion of mothers with puerperal blues had a crying baby, a vomiting baby or a baby giving mother bad nights (Table III). Carne (1966) has described how a vomiting baby may be the presenting symptom of the mother's puerperal depression, and this is the first statistical confirmation of his observation.

Table II

Comparison of normal and puerperal depressive women

	Normal	Puerperal depression	χ^2 on 1 d.f.
Total in group	175	14	
A. *Significant differences at 5% level*	%	%	
Anxious at first interview ..	13	36	4·9
No pregnancy symptoms ..	6	21	4·3
Elated during pregnancy ..	26	64	5·2
Antagonistic to lactation ..	24	0	3·9
B. *Differences not statistically significant*	%	%	
Keen on lactation	57	93	
Difficult labour ..	27	43	
Labour over 24 hours	12	21	
Complications in labour	43	60	
Breastfeeding at two weeks ..	35	57	
Thriving baby ..	98	70	
C. *No apparent differences*	%	%	
Welcoming pregnancy ..	57	57	
Previous psychiatric illness	9	7	
Depression during pregnancy ..	35	43	
Irritability during pregnancy ..	40	43	
Tiredness during pregnancy ..	73	79	
Headache during pregnancy ..	40	57	
Bachache during pregnancy ..	55	57	
Nausea during pregnancy	62	50	
Vomiting during pregnancy ..	49	50	

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TABLE III

Differences between those with puerperal blues and normal women

	Normal women	Puerperal blues	χ^2 on 1 d.f.
Total in group	124	48	
	%	%	
+ *Crying baby*	6	19	6·2
+ *Vomiting baby*	2	8	6·3
+ *Bad nights*	7	19	4·2

+ Statistically significant at 5 per cent confidence level.

DISCUSSION

The findings of this survey are in agreement with recent work on puerperal depression. Our figure of 7 per cent of puerperal depression compares with an incidence of 3 per cent found in a general practice retrospective survey by Ryle (1961) and a prospective survey by Tod (1964), and 10 per cent found by Pitt (1968) in a prospective survey of hospital deliveries. Anxiety was present at the first interview in 36 per cent of puerperal depressives, but in later pregnancy elation was the predominant mood in 64 per cent. Tod found anxiety in every mother developing puerperal depression, but although some were obviously anxious 'yet others appeared in the best of physical and mental health, and only exhaustive probing revealed the underlying distress.' Pitt found no evidence that puerperal depressives were more anxious during pregnancy, but he assessed patients only in the last trimester of pregnancy. It appears that anxiety in early pregnancy indicates the possibility of puerperal depression. This could be a factor for consideration in termination of pregnancy.

Blair and his colleagues (1970) also found that tiredness was the commonest symptom in women during pregnancy. Bratfos and Haug (1966), in a retrospective study of puerperal manic depressives, also found that the majority had no pregnancy symptoms. No difference was observed in the incidence of previous psychiatric illness between normal women (9 per cent) and puerperal depressives (7 per cent), which is in agreement with the findings of Foundeur *et al.* (1957); Pitt (1968); Blair *et al.* (1970); and Yalom *et al.* (1968).

The predominant characteristics of puerperal depressives appear to be women with:

(1) a favourable attitude to motherhood, (welcoming pregnancy, elated during pregnancy, free from pregnancy symptoms, eager to breast-feed and successful at breast-feeding).

(2) labile emotions (anxious initially, elated during later pregnancy and depressed during puerperium).

Tod, Ryle, Blair and his colleagues, in their respective papers on puerperal depression, all assumed a psychological explanation for the illness, although other aetiological explanations are possible. The findings of marked maternal characteristics and labile emotions could be explained on a hormonal basis. A high level of elation was noted during pregnancy when the placental steroid levels were at their height, and the subsequent depression during the puerperium occurred following the sudden loss of the placental steroid output.

The varying levels of the menstrual hormones during the monthly cycle are sufficient to cause important mood swings during the paramenstruum. The far-reaching effects of these hormonal changes are shown in premenstrual tension and depression, increase of accident-proneness, lowering of mental ability and temporary alteration of behaviour in the paramenstruum (Dalton, 1964). Nevertheless the hormonal swings of the menstrual cycle are infinitesimal when compared with the massive increase in placental steroids during pregnancy and the abrupt deprivation of steroids following delivery. The marked differences in hormone levels between those existing in late pregnancy and in early puerperium call for remarkable adjustment capabilities on the part of the woman. Is puerperal depression but a failure to adjust adequately to this hormonal change? Is it the high level of steroids in late pregnancy that is responsible for the elation, and does its rapid fall in early puerperium cause depression?

Greene and Dalton (1953) noted that among 59 parous women suffering from premenstrual syndrome 93 per cent were symptom-free during the middle and last trimester of pregnancy and 62 per cent remarked on their improved health and increased energy during

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this time. Puerperal depression is a recognized hazard for women with premenstrual syndrome (Malleson, 1963; Dalton, 1964), while Hegarty (1955) noted the high incidence of premenstrual syndrome following puerperal depression. This suggests that those women who experience difficulties in adjusting to the differing hormone levels of the premenstruum will tend to have even greater difficulty in adjusting to the hormone levels of the puerperium, especially if elation has been present during late pregnancy. This hypothesis would explain why puerperal depression is unrelated to a previous psychiatric illness.

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Katharina Dalton, M.R.C.S., L.R.C.P., *86 Harley Street, W.1*

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