

SHORT REPORT

Mothers' postpartum psychological adjustment and infantile colic

I Akman, K Kuşçu, N Özdemir, Z Yurdakul, M Solakoglu, L Orhan, A Karabekiroglu, E Özek



Arch Dis Child 2006;91:417–419. doi: 10.1136/adc.2005.083790

Background: Infantile colic is a common problem of early infancy. There is limited data on the relation between postpartum maternal psychological problems and colic.

Aim: To investigate whether infantile colic is associated with postpartum mood disorders or insecure adult attachment style of the mother.

Methods: Seventy eight mothers and newborns were enrolled in this prospective, longitudinal study. Maternal depressive symptoms were screened with Edinburgh Postpartum Depression Score (EPDS) and maternal anxiety was assessed with State-Trait Anxiety Inventory (STAI). The Adult Attachment Scale was used to determine the attachment style of the mother. Infantile colic was defined according to Wessel criteria.

Results: Infantile colic was present in 17 infants (21.7%); 12.9% of the mothers had an EPDS ≥ 13 . The mean EPDS of the mothers whose infants had infantile colic (10.2 ± 6.0) was significantly higher than that of the mothers of infants without colic (6.3 ± 4.0). Among infants with infantile colic, 62.5% had mothers who had insecure attachment style, whereas only 31.1% of mothers had insecure attachment when the infant did not have infantile colic.

Conclusion: Postpartum maternal depressive symptoms and insecure attachment style are associated with infantile colic. Screening and early intervention of postpartum depression might promote the health of both the mother and infant.

Infantile colic is a common problem that affects 9–26% of infants.^{1,2} The aetiology is unknown but it has been suggested to be due to a behavioural problem resulting from a less than optimal parent–infant interaction.² Limited evidence so far suggests that infantile colic may be associated with early discontinuation of breast feeding, child abuse, and psychosocial problems of the family.^{2,3}

An important number of new mothers experience depressive or anxiety symptoms; postpartum depression affect 10–15% of the new mothers.^{4,5} The risk factors of postpartum depression include stressful life events, poor marital support, depressive and anxiety symptoms during pregnancy, past history of depression, adverse childhood experiences, family history of mood disorder, infant health problems, and mother's insecure attachment style.^{6,7} Although factors that predict postpartum depression have been studied in detail, its consequences on childcare are poorly understood.

Attachment is a behavioural pattern that reflects emotional connection established between a child and caregiver in the first year of life. It has an impact on human development and reflects the reciprocal relationship of children and parents.^{7,8} In an earlier meta-analysis on infant–mother relationships, it was shown that if mothers' attachment styles were secure,

the caregiving behaviour tended to be warm, responsive, and positive. Despite the importance on the child's development, attachment research has found limited space for application in clinical paediatrics.^{7,8}

The aim of this longitudinal study was to determine the frequency of infantile colic in healthy infants, and to investigate the relationship between attachment styles and levels of depression and anxiety of mothers who had infants with colic over the first 4 months of age.

METHODS

The population comprised a cohort of 100 mothers and newborns who were followed at Marmara University Hospital. The inclusion criteria were uneventful prenatal, perinatal, and postnatal course, and agreement of the mother to participate in the study. Newborns with any medical problems were excluded from the study. Among 100 eligible mothers for evaluation, five refused to participate in the study, eight mother–infant pairs were excluded because of medical problems, and nine did not attend their follow up appointments. The final group of subjects included 78 mothers and infants. The study was approved by the Marmara University Hospital Ethical Committee, Istanbul, Turkey.

Perinatal records were reviewed and the newborns were examined in the first week, first month, and at 4–6 months of age. Wessel criteria were used to define "infantile colic" as paroxysms of irritability, fussing, or crying lasting for a total of more than 3 hours a day and occurring on more than 3 days in any one week.¹ A complete physical examination was done. Urine and stool analysis were performed when indicated.

Maternal evaluations were done by a semi-structured interview within the first week of delivery of the baby to assess the context of pregnancy and postpartum experience of caregiving in the first week after delivery. The participants were given the following questionnaires in the first postpartum month: Adult Attachment Scale (AAS),⁹ Edinburgh Postpartum Depression Score (EPDS),¹⁰ and State-Trait Anxiety Inventory (STAI).¹¹

Mothers who were at high risk for postpartum depression (EPDS ≥ 13) were invited to the psychiatry outpatient clinic for possible clinical intervention and follow up.

Statistical analysis

Data were analysed using SPSS 10.0 for Windows. Differences in dichotomous variables were analysed by Pearson's χ^2 test or Fisher's exact test, and differences in continuous variables were analysed by the independent samples *t* test and Mann–Whitney U test.

RESULTS

Table 1 shows demographic characteristics of the study group. There were no statistically significant differences between groups regarding maternal age, mode of delivery, education, and employment. Infantile colic was determined

Table 1 Demographic characteristics of patients with and without infantile colic

Characteristics	Infantile colic present (n = 17)	Infantile colic absent (n = 61)
Birth weight (mean ± SD)	3246.2 ± 323.8	3485.9 ± 542.7
Sex (n)		
Male	10/17	29/61
Female	7/17	32/61
Age of the mother (mean ± SD)	31.1 ± 6.0	29.6 ± 4.8
Type of delivery (n)		
Normal spontaneous delivery	6/17	25/61
Caesarean section	11/17	36/61
Mother's education (n)		
<8 years	4/17	13/61
>8 years	13/17	48/61
Working status		
Working outside the house	8/17	30/61
Housewife	9/17	31/61

in 17 infants (21.7%). Urinary tract infection and inguinal hernia were diagnosed in three patients with the complaint of excessive crying. Symptoms were relieved after appropriate treatment and infants were not diagnosed as having infantile colic.

The mean EPDS of the mothers whose infants had infantile colic was significantly higher than that of the mothers of infants without colic (fig 1). The EPDS was >13 in 10 of the 78 mothers (12.9%) in the study group, indicating a high risk for postpartum depression. Among infants with colic, 23.5% had mothers whose EPDS was >13, whereas only 10% of mothers had high EPDS when the infant did not have colic. This tendency was not statistically significant.

Among 67 mothers who completed the AAS, 29 (29.4%) had insecure attachment style. A larger number of mothers had insecure attachment style when their infants had infantile colic compared to the mothers whose infants did not have infantile colic (10 (62.5%) versus 19 (31.5%) respectively); this finding was statistically significant (p = 0.02).

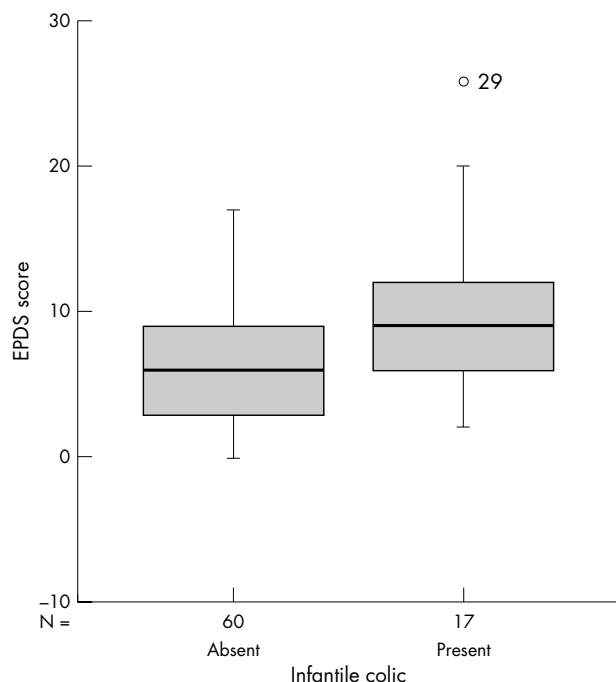


Figure 1 EPDS of mothers of infants with and without colic.

The median trait anxiety score of the mothers whose infants had infantile colic was higher than that of mothers of infants without infantile colic (42.0 (IQR 33.5–51.0) versus 36.0 (IQR 31.5–44.5) respectively). The median STAI score of the mothers whose infants had infantile colic was higher than that of mothers of infants without colic (44.0 (IQR 41.5–51.0) versus 41.0 (IQR 33.0–49.5) respectively); these were not statistically significant.

The mean EPDS score of mothers with secure attachment (5.6 ± 3.8) was lower than the EPDS score of mothers with insecure attachment (10.1 ± 5.9) (p < 0.001). The mean state anxiety score of mothers with secure attachment (36.0 ± 7.8) was lower than the mean anxiety score of mothers with insecure attachment (40.8 ± 10.2) (p < 0.01).

DISCUSSION

The current study showed that mothers of infants with infantile colic have higher mean EPDS than the mothers of infants without colic; 21.7% of infants were found to have infantile colic. Three of them had organic problems causing persistent crying, indicating the importance of exclusion of organic disorders before diagnosis of infantile colic is made.

In the generation of colic, temperamental predisposition (more sensitive, more irritable, etc) of the infant is an important factor. In addition, inexperience or high anxiety levels of parents may make them less skilful in responding to their infants' needs.² Risk of infantile colic was found to be increased threefold in infants of mothers who reported distress during pregnancy.³

Unrecognised and untreated depressive symptoms may result in significant psychological disability for mothers, and may place their children at risk for developing serious developmental, behavioural, and emotional problems.⁴ Many mothers do not recognise their problem as depression; thus paediatric visits can provide an opportunity to identify mothers with depressive symptoms, and EPDS screening by the paediatrician is recommended.⁶

In our study, 12.9% of mothers had high EPDS (≥13). If the score is ≥13, the sensitivity for postpartum depression is 86% and the specificity is 78%.¹⁰ Although more mothers with colicky infants had EPDS ≥13 in our study, this association was not statistically significant; however we found that mothers of infants with infantile colic had higher mean EPDS than the mothers of infants without colic.

Depressed mothers were found to have a lower level of interaction with their infants.⁶ Infants may respond by crying to signal unmet needs or distress which may cause a vicious cycle. Wessel reported a strong association between family tension and paroxysmal fussiness of infants.¹ Families with problems of colic require more attention for psychosocial problems and family functioning.

Mothers of excessively crying infants have been found to have psychological conflicts regarding the maternal role, and inconsistent style in interactions with the baby.² Difficulties in interactions of mothers and infants increase the risk of insecure attachment.¹² Insecure attachment style predicts depression prospectively,¹³ but there is limited data on the relationship of attachment style and postpartum depression. Our study supports the hypothesis that individuals with insecure attachment style are more prone to postpartum depression. In our study mothers with insecure attachment had higher EPDS values.

We found that mothers with insecure attachment style had a higher risk of having a baby with infantile colic. Attachment pattern of the mother has several impacts on the mother–infant dyad. Early attachment predicts socio-emotional development of the infant.¹² The caregiving relationship may have an impact on infant regulatory difficulties and behaviour problems, and implications of

attachment theory for paediatric practice could provide clues for possible preventive psychosocial interventions for these clinical agendas.

In conclusion, our study shows that postpartum maternal depression symptoms and insecure attachment style are associated with infantile colic. Screening, early diagnosis, and treatment of postpartum depression might promote the health of both the mother and infant. Future studies investigating the effect of treatment of maternal depression on occurrence of infantile colic might help us to better understand this relationship.

Authors' affiliations

I Akman, Z Yurdakul, E Özek, Marmara University Medical School, Department of Pediatrics, Division of Neonatology Istanbul, Turkey
K Kuşçu, L Orhan, A Karabekiroğlu, Marmara University Medical School, Department of Psychiatry, Istanbul, Turkey
N Özdemir, Marmara University Medical School, Department of Pediatrics, Istanbul, Turkey
M Solakoglu, Marmara University Medical School, Department of Public Health, Istanbul, Turkey

Competing interests: none declared

Correspondence to: Dr I Akman, Çevre Sok, 54/6 06680, Çankaya, Ankara, Turkey; ipekakman@yahoo.com

Accepted 9 January 2006

Published Online First 1 February 2006

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