TABLE A2—Independent variables significantly associated with still-birth or neonatal death excluded from model because of covariance

Height of mother
Number of previous premature births
Haemoglobin concentration
Duration of first stage of labour
Maternal age
Fetal distress (cord/prolapse/meconium/fetal heart)
Social and economic status
Fever/tonsillitis/laryngitis
Urinary tract infection
Type of resuscitation
Prescription of drugs to baby
Lobelline
Streptomycin

included in the model that optimally estimates the log odds of stillbirth or neonatal death in the whole British perinatal mortality survey (1958) cohort. This list of variables includes the names of categorical variables together with the design variables that are generated (for example, “parity” is a categorical variable with four categories and hence three design variables labelled as “1”, “2”, “3”), as well as their coefficients. Categorical variables with two categories have been listed in table A2 as having only a single entry in the model. No interactions were included in the model owing to the computational problems that these would have generated for little improvement of the model.

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Infant feeding practices and ulcerative colitis in childhood

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Accumulating evidence indicates that events early in life, including infant feeding practices, can have long term effects on health and disease.¹ We recently showed that the absence of breast feeding and early diarrhoea are independent risk factors associated with development of Crohn's disease later in childhood.² To determine if similar risk factors were linked to the development of ulcerative colitis we carried out an epidemiological case-control study.

Patients, methods, and results

A questionnaire was sent to 118 families with at least one child with ulcerative colitis diagnosed by endoscopic and histological criteria. Data obtained included age, sex, premature delivery, diarrhoeal illnesses during the first six months of life, type of feeding used from birth, duration of exclusive breast feeding, total duration of breast feeding, and the age at which solids were introduced. As in our previous study breast feeding referred to any provision of human milk and exclusive breast feeding indicated the absence of formula milk and solids.² Unaffected siblings served as controls to reduce the variation of genetic factors and confounding variables. Potential risk factors were analysed within families by using the conditional logistic regression model.³

Of the 118 families, 108 (92%) completed the questionnaires. This included 17 children without unaffected siblings, leaving 93 affected children and 138 siblings available for analysis. The mean (14.2 (SD 4.1) years) and median (15.0 years) ages for children with ulcerative colitis were comparable with those of the group of unaffected siblings (15.7 (6.5); 15.8).

Multivariate analysis showed that children with ulcerative colitis were more likely to have had diarrhoeal diseases during infancy (relative risk 3.2 (95% confidence limits 1.15 to 8.75), $p=0.03$) compared with their unaffected siblings. Female sex was also an independent risk factor (2.3 (1.23 to 4.35), $p=0.01$). In contrast to our previous findings for childhood Crohn's disease,² absence of breast feeding was not significantly different among children with ulcerative colitis (1.7 (0.77 to 3.65), $p=0.19$). Duration of exclusive breast feeding, total length of breast feeding, and age at introduction of solid foods did not differ between children with ulcerative colitis and their siblings. Birth order and the incidence of premature delivery were comparable in the two groups.

Comment

In this study the lack of breast feeding and presence of formula feeding were not identified as risk factors for the development of childhood ulcerative colitis. This finding agrees with the results of one study³ but contrasts with two studies in adults with ulcerative colitis^{4,5} and our previous observation of paediatric Crohn's disease.² Our study design reduces the possibility of recall bias because parents completed the questionnaires for both cases and controls. In addition,

the question of whether or not a child was ever breast fed is not subject to major recall error. The length of time elapsed before obtaining data was less for our paediatric patients than in studies in adults.^{4,5}

It is possible that the aetiologies of Crohn's disease and ulcerative colitis are distinct and that breast feeding exerts a protective effect only in Crohn's disease. Alternatively, a small protective effect of breast feeding in preventing later ulcerative colitis may not have been identified by the number of patients entered into this study (type II error).

As in our previous study of childhood Crohn's disease, diarrhoeal illness during infancy was identified as an independent risk factor for subsequent development of ulcerative colitis. Infectious diarrhoea could increase exposure of the enteric immune system to luminal antigens,¹ leading to enhanced or altered immune responses against dietary and microbial antigens later in life. It is possible, however, that recall bias accounted for the difference observed between the two groups as parents might remember previous intestinal symptoms more often among their affected

children. The intrafamilial analysis we used might account for the different outcome from that in other studies.^{3,4} Additional data are required to clarify the influence of events in early childhood on the development of inflammatory bowel diseases.

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Somatic component to myocardial infarction: three year follow up

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In an earlier study we reported palpable changes in paravertebral tissue in patients with acute myocardial infarction.¹ We undertook a follow up study to determine whether this somatic component altered as the myocardial damage resolved.

Patients, methods, and results

Eight of the 25 patients with myocardial infarction who participated in the initial study were available for follow up three to four years later. Of the others, nine had died and eight had moved away or were unwilling or too debilitated to participate.

The osteopathic physicians were unaware of the clinical diagnosis and were not allowed to talk to the patients in case this provided them with subjective information. As none of the patients had been admitted to hospital it was not necessary to simulate visual clues of treatment as had been necessary in the first study. The physicians noted palpable changes in the paravertebral soft tissue from T1 to T8 that matched predetermined qualitative descriptors,^{2,4} as in the

previous study. Changes from T1 to T4 and from T5 to T8 on each side were evaluated statistically with the Wilcoxon matched pair signed rank test. The differences in the findings between the two studies were ranked and analysed.

The study was approved by the American Osteopathic Association Bureau of Research and the institutional review board of the Philadelphia College of Osteopathic Medicine. Written informed consent was obtained from all subjects.

The number of palpable sites between T1 and T4 on the left had fallen in six patients and was the same in two ($p < 0.05$; figure); the median change was -1.5 (95% confidence interval 0 to -4). The other comparisons between the two studies yielded $p > 0.2$.

Comment

Our findings suggest that the somatic component of myocardial infarction and the insult to the myocardium may be anatomically and physiologically related. We are planning a prospective study of patients at high risk of myocardial infarction to determine whether the somatic changes are present before infarction is clinically apparent. Such an early predictor would speed clinical management and might reduce mortality. The 30 year update of the Framingham study showed that unrecognized myocardial infarction is common and has a poor prognosis.⁵ Clearer definition of the somatic component could help in the diagnosis of silent myocardial infarction and allow earlier clinical intervention.

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Change in number of palpable sites between T1 and T4 on left side in eight patients with myocardial infarction followed up after three to four years