

hay fever⁴ and for raised IgE for common inhalation allergens at age 11.⁵ It would therefore be most informative if the authors could provide additional data on the differences between the neonatal anthropometric data of the children with and without caesarean section, and on the indications for caesarean sections themselves. This issue is of significant importance and of clinical relevance because, if indeed a causal relationship exists between mode of delivery and development of asthma, this would certainly make an argument against elective caesarean section for non-medical reasons. It would seem that there is currently insufficient evidence to infer a causal relationship, but it certainly seems worthwhile sorting this out.

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REFERENCES

1. **Roduit C**, Scholtens S, De Jongste JC, *et al*. Asthma at 8 years of age in children born by caesarean section. *Thorax* 2009;64:107–13.
2. **Fergusson DM**, Crane J, Beasley R, *et al*. Perinatal factors and atopic disease in childhood. *Clin Exp Allergy* 1997;27:1394–401.
3. **Bernsen RM**, De Jongste JC, Koes BW, *et al*. Perinatal characteristics and obstetric complications as risk factors for asthma, allergy and eczema at the age of 6 years. *Clin Exp Allergy* 2005;35:1135–40.
4. **Katz KA**, Pocock SJ, Strachan DP. Neonatal head circumference, neonatal weight, and risk of hayfever, asthma and eczema in a large cohort of adolescents from Sheffield, England. *Clin Exp Allergy* 2003;33:737–45.
5. **Leadbitter P**, Pearce N, Cheng S, *et al*. Relationship between fetal growth and the development of asthma and atopy in childhood. *Thorax* 1999;54:905–10.

Caesarean section and asthma: alternative explanations?

In their detailed analysis of almost 3000 children followed from birth until the age of 8 years, Roduit *et al*¹ showed that children born by caesarean section have a higher risk of asthma than those born by vaginal delivery. Surprisingly, the authors offer only one explanation for this finding—namely, delayed microbial colonisation—whereas we believe other mechanisms cannot be excluded.

As an alternative hypothesis we propose to investigate the possibility of confounding by factors already present at/before birth. This hypothesis is supported by studies showing that immunological parameters in cord blood are different between children born by vaginal delivery and those born by caesarean section.² One such factor could be head circumference which has been

repeatedly found to be related to increased IgE and the development of asthma and related disorders,^{3–5} and babies born by caesarean section probably have relatively high values.

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REFERENCES

1. **Roduit C**, Scholtens S, de Jongste JC, *et al*. Asthma at 8 years of age in children born by caesarean section. *Thorax* 2009;64:107–13.
2. **Laubereau B**, Filipiak-Pittroff B, von Berg A, *et al*, GINI Study Group. Caesarean section and gastrointestinal symptoms, atopic dermatitis, and sensitisation during the first year of life. *Arch Dis Child* 2004;89:993–7.
3. **Godfrey KM**, Barker DJ, Osmond C. Disproportionate fetal growth and raised IgE concentration in adult life. *Clin Exp Allergy* 1994;24:641–8.
4. **Linneberg A**, Simonsen JB, Petersen J, *et al*. Differential effects of risk factors on infant wheeze and atopic dermatitis emphasize a different etiology. *J Allergy Clin Immunol* 2006;117:184–9.
5. **Bernsen RM**, de Jongste JC, Koes BW, *et al*. Perinatal characteristics and obstetric complications as risk factors for asthma, allergy and eczema at the age of 6 years. *Clin Exp Allergy* 2005;35:1135–40.

Presence of MBL in airways: is it a disease severity marker or an additional host defence mechanism?

We welcome the paper by Fidler and colleagues reporting the presence of mannose-binding lectin (MBL) in infected airways.¹ MBL is an important acute phase protein with pro- and anti-inflammatory immunomodulatory functions.² The collectin family comprises surfactant protein (SP)-A, SP-D and MBL, of which the latter is mostly present in peripheral blood while the other two are mostly located in the lung.³ We agree with Fidler *et al* that MBL might contribute to lung host defence by acting locally at the airway surface because of its similar structure to lung collectins and its presence at a physiological level in the lung. It is possible, however, that the presence of MBL in the bronchoalveolar lavage (BAL) fluid of infected children might just be a marker of lung infection or disease severity. The data of Fidler *et al* clearly show a trend suggesting that MBL was more consistently detectable in acute than in chronic diseases; this may simply be a correlate of alveolar epithelial permeability. A similar study performed by our group on HIV-infected

adults showed that the levels of MBL in BAL fluid were undetectable even when present in serum. The levels of SP-D in the same study were not significantly different in lung fluid from HIV-uninfected and HIV-infected individuals with a high CD4 count (>200), but were raised in HIV-infected individuals with a low CD4 count.⁴ We tested the hypothesis that levels of SP-D or MBL in HIV-infected individuals would be lower than in HIV-uninfected individuals, but this was not the case. The phenomenon that levels of defence factors are poorly associated with protection has also been shown with other defence factors such as antibodies.⁵

In conclusion, we totally agree with Fidler *et al* that future studies should focus on measuring the functional aspect of collectins. Functional assays will help to determine whether the presence of MBL in the lung acts as an additional host defence or whether it is just a marker of disease severity.

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REFERENCES

1. **Fidler KJ**, Hilliard TN, Bush A, *et al*. Mannose-binding lectin is present in the infected airway: a possible pulmonary defence mechanism. *Thorax* 2009;64:150–5.
2. **Crouch EC**. Collectins and pulmonary host defense. *Am J Respir Cell Mol Biol* 1998;19:177–201.
3. **Davies J**, Turner M, Klein N. The role of the collectin system in pulmonary defence. *Paediatr Respir Rev* 2001;2:70–5.
4. **Jambo KC**, French N, Zijlstra E, *et al*. AIDS patients have increased surfactant protein D but normal mannose binding lectin levels in lung fluid. *Respir Res* 2007;8:42.
5. **Linder A**, Hollingshead S, Janulczyk R, *et al*. Human antibody response towards the pneumococcal surface proteins PspA and PspC during invasive pneumococcal infection. *Vaccine* 2007;25:341–5.

Thoracic ultrasound: an important skill for respiratory physicians

We read with interest the article by Qureshi and colleagues describing thoracic ultrasound (TUS) characteristics for the detection of malignant pleural effusions.¹ This relatively simple bedside technique has been routinely performed by the respiratory physicians in our department in a busy general hospital for the last 4 years, resulting