

## LETTERS TO THE EDITOR

### Asthma: a follow up statement from an international paediatric asthma consensus group

SIR,—We read with interest the follow up statement from an international paediatric asthma consensus group.<sup>1</sup> We are surprised that the authors are not more emphatic about the value of peak flow monitoring in recognising severe episodes of asthma. The authors state that patients should 'understand the use of peak flow meters' and that 'action plans should . . . include instruction on the signs that indicate worsening of asthma'. Comparable guidelines for adults have been much more explicit about the use of peak flow meters in the recognition of severe episodes of asthma.<sup>2,3</sup>

Every asthmatic child over 5 years old who attends our outpatient clinic is given a peak flow meter. We teach families that they should identify their child's best peak flow reading. We then give them a 'danger' figure (usually 60% of their best reading) and tell them to come to our accident and emergency department if the peak flow falls below that figure and does not improve promptly with bronchodilators. We find the asthma card supplied by the National Asthma Campaign to be useful. This card has separate sections for noting the child's best and danger peak flow levels.

In a study of the value of home peak flow monitoring we have interviewed 58 families attending our clinic. Fifty four families knew their child's best and danger peak flows to within 20% of the actual values and knew what to do about readings below the danger level. Four families either did not use the peak flow meter or had too poor a knowledge of their child's best and danger peak flow readings for the meter to be useful.

Most families find the concepts of best and danger peak flow levels helpful. The proportion of asthmatic children attending a clinic who have a peak flow meter and whose families know their child's best and danger peak flow levels is a useful performance indicator and can be audited.

MUTTIB ALI  
BEN LLOYD  
The North Middlesex Hospital,  
Sterling Way,  
London N18 1QX

- 1 International Paediatric Asthma Consensus Group. Asthma: a follow up statement from an international paediatric asthma consensus group. *Arch Dis Child* 1992;67:240-8.
- 2 British Thoracic Society, Research Unit of the Royal College of Physicians of London, King's Fund Centre, National Asthma Campaign. Guidelines for management of asthma in adults: I—chronic persistent asthma. *BMJ* 1990;301:651-4.
- 3 British Thoracic Society, Research Unit of the Royal College of Physicians of London: King's Fund Centre, National Asthma Campaign. Guidelines for management of asthma in adults: II—acute severe asthma. *BMJ* 1990;301:797-800.

### Beta glucuronidase and hyperbilirubinaemia in breast fed infants of diabetic mothers

SIR,—We read the paper of Sirota *et al* with interest.<sup>1</sup> They suggest, after a study of 10 breast fed infants of diabetic mothers (IDM) and their mothers plus 10 infant and mother controls, that the high concentration of  $\beta$ -glucuronidase in breast milk of diabetic mothers is an additional important cause leading to hyperbilirubinaemia in their breast fed babies. We were concerned about problems that may limit successful breast feeding in our hospital, and identified exaggeration of physiological jaundice as a major problem. Following the work of Gourley and Arend,<sup>2</sup> we aimed to determine if a relationship existed between the concentration of breast milk  $\beta$ -glucuronidase and the degree of early (first week) neonatal jaundice. Our study showed no relationship ( $r=0.12$ ,  $p=0.4$ ) between them in 55 healthy, full term infants who were breast feeding satisfactorily in baby and mother pairs on the third to sixth postnatal day.<sup>3</sup> There were no IDM. Mean (SD) concentrations of breast milk  $\beta$ -glucuronidase and serum bilirubin were 387 (189) Sigma/units and 192 (108)  $\mu\text{mol/l}$  respectively. We felt that breast milk  $\beta$ -glucuronidase could not directly account for the exaggerated early neonatal jaundice seen in breast fed babies.

D C WILSON  
M AFRASIABI  
MMCC REID  
Royal Maternity Hospital,  
Grosvenor Road,  
Belfast BT12 6B7

- 1 Sirota L, Ferrera M, Lerer N, Dulitzky F. Beta glucuronidase and hyperbilirubinaemia in breast fed infants of diabetic mothers. *Arch Dis Child* 1992;67:120-1.
- 2 Gourley GR, Arend RA.  $\beta$ -glucuronidase and hyperbilirubinaemia in breast fed and formula fed babies. *Lancet* 1986;i:644-6.
- 3 Wilson DC, Afrasiabi M, Reid MMCC. Breast milk beta glucuronidase and exaggerated jaundice in the early neonatal period. *Biol Neonate* 1992 (in press).

### Use of the polymerase chain reaction to detect rhinovirus in wheezy infants

SIR,—We were interested in the report of the use of DNA amplification techniques applied to throat swabs taken from children with varicella zoster.<sup>1</sup> We have used similar methods to detect rhinovirus in samples taken from the nose in wheezy infants.

Rhinovirus infection is classically associated with the upper respiratory tract, being the major cause of the common cold. Community based studies in the 1970s have shown that rhinovirus infection was also frequently responsible for exacerbations of wheezing in susceptible children.

Detection of rhinovirus is notoriously difficult because of the existence of the many immunologically distinct serotypes which excludes the use of immunological assays. Some of the serotypes also grow poorly in tissue culture. This has been highlighted by the large study in Tuscon where rhinovirus was isolated fewer than five times out of 348

episodes of lower respiratory illness, despite the fact that they achieved a very high overall viral isolation rate of 66%.<sup>2</sup>

Recent techniques have been described which utilise the polymerase chain reaction (PCR) to amplify and detect RNA from rhinovirus.<sup>3</sup> With experience the method is rapid, sensitive, and reliable.

Nose swabs were taken and nasal lavage performed on infants hospitalised with wheezing secondary to an upper respiratory tract infection. Lavage was carried out with phosphate buffered saline and 200  $\mu\text{l}$  aliquots were stored at  $-70^{\circ}\text{C}$ .

PCR was performed after RNA extraction from nasal washes and reverse transcription. The two primers used, OL24 (5'CTACTTTGGGTGTCCG 3') and OL68 (5'GGGACCTCCACCACCACC 3'), bind to highly conserved sequences found in all rhinoviruses and in each case give a fragment of approximately 550 nucleotides. A positive result was indicated by the presence of a DNA fragment of this size after subjecting the PCR amplified sample to agarose-gel electrophoresis. Although the sequences are also present in enteroviruses, here the fragment size generated by PCR is rather larger (approximately 690 nucleotides) and so this method enables differentiation between the viruses. All the positive samples gave the rhinovirus specific fragment.

There were 43 episodes recorded in 34 children, aged between 4 weeks and 2.7 years (average 8.8 months). Successful assaying was only possible in the lavage samples. Rhinovirus was detected in three out of 23 episodes that were negative for respiratory syncytial virus. In all three cases, rhinovirus was no longer present in the nose when the children were healthy, implying that it had not been present as a commensal organism. No child was positive for both rhinovirus and respiratory syncytial virus. In one case, a 6 month baby wheezing with respiratory syncytial virus was accompanied by her 2 year old brother who also had a viral wheeze, only his was due to rhinovirus.

In conclusion, PCR techniques can be successfully used to detect rhinovirus in the nose of infants who have an exacerbation of wheezing at the time of an upper respiratory tract infection.

I M BALFOUR-LYNN  
HB VALMAN  
Department of Paediatrics,  
Northwick Park Hospital and  
Clinical Research Centre,  
Watford Road,  
Harrow,  
Middlesex HA1 3UJ

G STANWAY  
M KHAN  
Department of Biology,  
University of Essex,  
Colchester CO4 3SQ

- 1 Ozaki T, Miwata H, Matsui Y, Kido S, Yamanishi K. Varicella zoster virus DNA in throat swabs. *Arch Dis Child* 1991;65:333-4.
- 2 Wright AL, Taussig LM, Ray CG, Harrison HR, Holberg CJ. The Tuscon children's respiratory study. II Lower respiratory tract illness in the first year of life. *Am J Epidemiol* 1989;129:1232-46.
- 3 Gama RE, Horsnell PR, Hughes PJ, *et al*. Amplification of rhinovirus specific nucleic acids from clinical samples using the polymerase chain reaction. *J Med Virol* 1989;28:73-7.