LETTER

Does tidal exhaled nitric oxide reflect mucosal airway inflammation in infants?

Exhaled nitric oxide (FE\textsubscript{NO}) has been proposed as a surrogate of airway inflammation in asthma. The measurement of FE\textsubscript{NO} may be important to distinguish conditions characterised by eosinophilic inflammation from those which are non-eosinophilic, the former being more likely to respond to steroid treatment. Studies in adults and school-aged children have shown that FE\textsubscript{NO} levels correlate to some extent with airway mucosal eosinophilia quantified in endobronchial biopsies.\textsuperscript{1-4} However, no such studies exist in infants. In this observational study, we assessed whether infants with recurrent respiratory symptoms, in whom bronchoscopy had been undertaken for clinical evaluation, showed evidence of a relationship between mucosal airway inflammation quantified in endobronchial biopsies and levels of FE\textsubscript{NO} measured during tidal breathing.

The study consisted of 36 infants, aged between 3.4 and 25.9 months, referred for clinical evaluation of recurrent lower respiratory tract symptoms (wheeze, cough and dyspnoea), and who underwent both FE\textsubscript{NO} measurement and bronchoscopy with an endobronchial biopsy specimen suitable for assessment of inflammatory cells. None had received corticosteroids within 8 weeks of the assessment. The study was approved by the local ethics committee, and written informed consent was obtained from parents. Details of patient characteristics, methods, statistical analyses and results are available as supplementary material online.

Figure 1  Distribution of exhaled NO levels by the endobronchial cell counts of eosinophils, neutrophils, mast cells and plasma cells. Low=count <50th percentile; high=count ≥50th percentile.
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