LETTER

Outcome after bronchiolitis depends on disease definition

Sigurs et al recently published their 18-year prospective controlled follow-up study of 47 subjects hospitalised for respiratory syncytial virus (RSV) bronchiolitis at age <12 months. In the cohort the prevalence of wheezing and asthma was higher than in population-based controls at 3, 7 and 13 years of age.

Asthma was present, depending on definition, in 33–39% of 46 study subjects and in 7–9% of 92 controls, in line with an asthma prevalence of 9.5% in Swedish young adults. The risk of adulthood asthma after RSV bronchiolitis was therefore 3.5–4.1-fold compared with the population.

Lung function by forced expiratory volume in 1 s (FEV1), ratio of FEV1 to forced vital capacity (FVC) and mid forced expiratory flow (FEF25–75) was reduced in the former patients with RSV bronchiolitis with and without current asthma but not in asthmatic controls. The differences were significant in both pre- and post-bronchodilator measurements, suggesting the permanence of the changes. Instead, no evidence was found for permanent small airway dysfunction by lung clearance calculation.

In our study, 100 infants aged <24 months were hospitalised with bronchiolitis in 1992–3. Eighty-one attended the control visit at age 12 years; asthma was present in 20% of former patients with RSV and in 52% of former non-RSV patients (OR 0.27, 95% CI 0.09 to 0.82), and in 58% of former patients with rhinovirus and in 34% of former non-rhinovirus patients (OR 2.6, 95% CI 0.89 to 7.94). RSV bronchiolitis was associated with a restrictive pattern of lung function documented by reduced FVC. A post-questionnaire study including population-based controls was performed in 2008 when the study subjects were 17–18 years of age (unpublished). Sixty-seven former patients with bronchiolitis and 155 controls attended, and current asthma was present in 50% and 5%, respectively (OR 7.9, 95% CI 3.3 to 19.3). Asthma was present in 25% of the former patients with RSV and in 26% of the former patients with rhinovirus. As in the study of Sigurs et al., asthma was common after early life bronchiolitis but a viral aetiology of bronchiolitis no longer had a predictive value.

Sigurs et al enrolled only RSV-positive patients with bronchiolitis aged <12 months treated in hospital, and >90% of the cases were aged ≤6 months. In the Tucson birth cohort study from which our current concept about childhood wheezing phenotypes originates, patients with bronchiolitis were aged <24 months with parent-reported wheezing treated usually at home. In the Finnish post-bronchiolitis studies highlighting the role of rhinovirus aetiology, RSV predominated in infants aged <6 months (“European bronchiolitis”) and rhinovirus in those aged 6–24 months (“American bronchiolitis”). In future studies of bronchiolitis, stratified analyses by age and viral findings are mandatory.

REFERENCES