Asthma and allergy patterns at age 4 to 8 in children with severe bronchiolitis

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Background. Severe bronchiolitis caused by respiratory sincitial virus (RSV) has been associated with recurrent wheezing in the first years of life. The role of other respiratory viruses is less known.

Objectives. To evaluate the mid-term outcome of bronchiolitis caused by RSV, rinovirus, metapneumovirus (HMPV) or bocavirus (HBoV) and compare it with children who had not experienced bronchiolitis.

Methods. We included the children of at least 4 years of age, hospitalized for bronchiolitis caused by RSV, rinovirus, HMPV or HBoV (single infections) from 2003-04 to 2008-2009 at Hospital Severo Ochoa (Leganes, Spain). We collected clinicoepidemiological variables and performed prick-test to inhaled allergens and spirometry in the bronchiolitis group. The control group was telephonically interviewed. Results. We included 144 cases (28 HMPV, 70 RSV, 36 rinovirus and 10 HBoV) and 144 controls. RSV-negative cases had more hospital admissions for respiratory conditions (17% vs 30% p=0.075), persistent asthmatic symptoms (7% vs 25% p=0.003) and asthmatic exacerbations in the last year (22% vs 40% p=0.023), compared to RSV-positive children. The frequency of recurrent wheezing, wheezing between the first and fifth year after bronchiolitis, asthma and use of controller medication were similar between the cases and significantly higher than in the control group. There were no differences between the cases regarding prematurity, day-care attendance, atopic dermatitis, allergic sensitization and pulmonary function.

Conclusions. Respiratory symptoms in the 5 years after a severe non-RSV bronchiolitis are significantly more frequent than among the general population and at least as frequent as in RSV-bronchiolitis.