postbronchodilator FEV_1/FVC deficits of –2.5% ± 0.8% from age 11 to 26 years. Early-life pneumonia was associated with increased risk for asthma (odds ratio [OR] 1.95, 95% confidence interval [CI]: 1.11–3.44) and wheeze (OR 1.94, 95% CI: 1.28–2.95) over the same age range. Early-life nonpneumonia LRIs were associated with milder impairment including prebronchodilator FEV_1/FVC deficits of –1.1% ± 0.5% and wheeze risk (OR 1.37, 95% CI: 1.09–1.72).

CONCLUSIONS. Early childhood pneumonia is associated with asthma and impaired lung function that is partially reversible by bronchodilator. The lung function impairment persists into adulthood and could be a major risk factor for chronic obstructive lung disease.

REVIEWER COMMENTS. Previous studies have shown that children with early life pneumonia have deficits in FEV_1 and FVC at 35 years (Johnston et al. *N Engl J Med*. 1998;338:581–587) and at 57.6 years (Shaheen et al. *Thorax*. 1998;53:549–553), but the FEV_1/FVC ratio was not changed. This is the first study that shows a more long-lasting obstructive defect in such children. The authors speculate their findings may be due to the disproportional negative effects of certain viruses (eg, adenovirus and influenza A) on small airways. An alternative and complementary explanation is that children with preexisting small airway caliber may also be at more risk for pneumonia.

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Short- and Long-Term Efficacy of Prednisolone for First Acute Rhinovirus-Induced Wheezing Episode

Jartti T, Nieminen R, Vuorinen T, et al. *J Allergy Clin Immunol*. 2015;135(3):691–698

PURPOSE OF THE STUDY. Rhinovirus is prevalent in children during the first 2 years of life. Rhinovirus-related cause of early wheezing is strongly associated with recurrent wheezing and asthma. This study hypothesized that prednisolone decreases the risk of relapse in children with their first rhinovirus-induced wheezing episode.

STUDY POPULATION. The study included children aged 3 to 23 months, gestational age ≥36 weeks, without previous corticosteroid use who were diagnosed with rhinovirus as detected by polymerase chain reaction and were experiencing their first wheezing episode.

METHODS. A double-blind randomized control trial design was used; 79 children with a first wheezing episode at age 3 to 23 months were randomized to receive oral prednisolone (first dose of 2 mg/kg, followed by 2 mg/kg/day in 2 divided doses for 3 days) versus placebo. Scheduled follow-up visits were arranged at 2 weeks, 2 months, and 12 months. The 3 primary outcomes were the occurrence of a new physician-confirmed wheezing episode during the 2-month follow-up, the number of physician-confirmed wheezing episodes during the 12-month follow-up, and the initiation of regular controller medication for asthma symptoms during the 12-month follow-up. The primary interaction analysis examined rhinovirus load.

RESULTS. Seventy-four patients completed the study. The prednisolone and placebo groups did not differ for the 3 primary outcomes. However, the 25 children with >7000 rhinovirus copies/mL benefitted from prednisolone in terms of less risk of physician-confirmed recurrence of wheezing within 2 and 12 months compared with placebo (both Ps < .05). For short-term outcomes, the prednisolone group had less cough, rhinitis, noisy breathing, severe breathing difficulties, and nocturnal respiratory symptoms within 2 weeks (all Ps < .05).

CONCLUSIONS. Prednisolone cannot be routinely recommended for all young children experiencing their first acute, moderate-to-severe, rhinovirus-induced wheezing episode. Prednisolone might be beneficial in a subgroup of children with high viral loads and lead to a lower risk of relapse or physician-confirmed wheezing episodes within 12 months.

REVIEWER COMMENTS. Although prednisolone showed no overall effect on the primary outcomes, the prednisolone group appeared to have benefitted from less short-term symptoms, and, when looking at longer-term outcomes, prednisolone made a difference for those with high rhinovirus loads. A rhinovirus-related cause of early wheezing is a promising new marker for the children at high-risk of asthma, and there is a need for a bedside quantitative rhinovirus detection test. These findings support a role for high rhinovirus load as an important marker in those children with early pulmonary inflammation who might benefit from acute treatment with prednisolone.

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An Epigenome-Wide Association Study of Total Serum Immunoglobulin E Concentration

Liang L, Willis-Owen S, Laprise C, et al. *Nature*. 2015;520 (7549):670–674

PURPOSE OF THE STUDY. Immunoglobulin (Ig)E-mediated allergic diseases, including asthma, atopic dermatitis (AD),

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