Large Study Links Rhinitis to Adult-Onset Asthma

BY SHARON WORCESTER
Southeast Bureau

Rhinitis was a strong predictor of adult-onset asthma, according to findings from an 8-year population-based study in Europe.

In the European Community Respiratory Health Survey, data from 6,461 participants showed that allergic rhinitis was associated with an increased risk of adult-onset asthma (adjusted relative risk of 3.53), as was nonallergic rhinitis, although to a lesser degree (adjusted relative risk of 2.71), Dr. Rafea Shaaban of Bichat Teaching Hospital, Paris, and colleagues reported.

The subjects were aged 20-44 years without asthma at baseline. They were categorized into four groups: a control group including 3,163 subjects with no atopy and no rhinitis, an atopy-only group including 704 subjects with atopy but no rhinitis, a nonallergic rhinitis group including 1,377 subjects with rhinitis but no atopy, and an allergic rhinitis group including 1,217 subjects with atopy and rhinitis.

A total of 140 subjects developed asthma during the 8.8-year study period, for a cumulative incidence of 2.2%. The incidence in the groups was 1.1%, 1.9%, 3.1%, and 4.0%, respectively. The differences were statistically significant, but only allergic rhinitis in those identified by a skin-prick test as having dust mite sensitization was found to be associated with increased risk of asthma independently of other allergens (Lancet 2008;372:1049-57).

A possible explanation for the dust mite link, the investigators said, is that patients with allergic rhinitis in response to mites are likely to have nasal symptoms over a longer period of time, because mites are a perennial indoor allergen. That theory is consistent with the findings of at least one other study showing that early exposure to dust mite allergen is associated with an increased risk of childhood asthma.

Sensitization to allergens in addition to mites was associated with additional small increases in asthma risk. For example, in those sensitized to dust mites, sensitization to cats increased asthma risk from 4.6% to 6.4%, and sensitization to grass increased the risk to 7.6%. Sensitization to birch increased the risk to 9.1%.

Those increases did not reach statistical significance, but that may be because of the small number of patients with those sensitivities, the researchers suggested.

Although prior epidemiologic and clinical studies have shown a close relationship between asthma and allergic rhinitis, the nature of the link between the two has remained unclear. The current study, however, provides new evidence that rhinitis is predictive of asthma development, the investigators said, along with support of hypotheses suggesting that rhinitis might be a cause of asthma.

In addition, the current findings suggest that bronchial hyperresponsiveness (BHR) is "an intermediate factor in the process leading from allergic rhinitis to asthma," the authors noted. Not only is allergic rhinitis shown in this and prior studies to be a risk factor for BHR in nonasthmatic adults, they said, but there is now substantial evidence that asymptomatic BHR frequently precedes—and can be considered a risk factor for—symptomatic asthma.

Because the association between asthma and allergic rhinitis in the current study decreased substantially after controlling for BHR, it is likely that part of the effect of allergic rhinitis on development of asthma is mediated through the development of BHR. "This observation is important, because BHR is thought to be a dynamic process, and can be decreased by anti-inflammatory therapy," the researchers said.

Interventional studies to assess the effects of rhinitis treatment on reducing the incidence of asthma—an effect that has been observed in clinical trials—are necessary to verify this effect, they concluded.

In an accompanying editorial, Dr. Erika von Mutius of University Children's Hospital in Munich wrote, "the idea that allergic rhinitis could cause asthma raises the possibility of preventing asthma by preventing atopic sensitization, which could in turn prevent allergic rhinitis."

The long-term preventive effect that immunotherapy might have is unknown, although it can improve nasal symptom scores, reduce airway responsiveness, and thus cut asthma burden in patients with allergic rhinitis (Lancet 2008;372:1012-4). But, "even if immunotreatments work, the fairly low population-attributable risk might diminish the overall effect of this therapeutic approach," she warned. ■