Identifying Asthma Triggers

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KEYWORDS

• Reflux • Paradoxic vocal fold dysfunction • Obesity • Asthma triggers • Sinusitis • Inhalant allergies • Food allergies

KEY POINTS

- Asthma may have one or many triggers.
- Identification and management of the trigger improves management.
- Common triggers include inhalants (allergens or irritants); food allergies (IgE and non-IgE mediated); gastroesophageal reflux; cyclooxygenase 1 inhibitors, such as aspirin in aspirin-exacerbated respiratory disease; and rhinosinusitis.
- Mimics of asthma include paradoxic vocal fold dysfunction.
- Comorbidities that exacerbate asthma include obesity.

INTRODUCTION

In medicine, the maxim that an ounce of prevention is worth a pound of cure plays a pivotal role in efficacious and cost-effective patient care. Asthma, with its pathogenesis rooted in atopy and airway hyperresponsiveness, can be treated in part by knowledge of and subsequent avoidance of the various triggers. Although asthma is associated with an allergic diathesis, an allergic trigger is only true or partly true in a subset of patients. This article reviews familiar allergic triggers and their management, and comorbid associations that worsen asthma or even mimic asthma without true bronchial hyperresponsiveness. In many patients there is more than one factor or trigger for the asthma, and optimal control is obtained when the patient and health care team work together to prevent exposure or ameliorate the aggravating condition, such as environmental allergens (pollen, dust mites, pet dander, and mold in the allergic patient with asthma). Other triggers or mimics of asthma symptoms are laryngopharyngeal reflux (LPR), also known as gastroesophageal reflux disease (GERD); exercise; irritants (tobacco smoke and industrial pollutants); food allergies; viral infections; pharmacologic agents (aspirin and β-blockers); and paradoxic vocal fold dysfunction (PVFD). Associations under investigation include obesity, stress, and hormonal status.

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INHALANT TRIGGERS

The initial assessment of a patient should follow a systematic series of questions to identify possible exacerbating factors (Fig. 1). Once preliminarily identified, specific triggers then elicit an appropriate algorithm of inquiry. It is necessary to identify the precipitating factors to optimally direct therapy or avoidance. When evaluating irritant

Inhalant allergens
Does the patient have symptoms year round? (If yes, ask the following questions. If no, see next set of questions).
Does the patient keep pets indoors? What type?
Does the patient have moisture or dampness in any room of his or her home (eg, basement)? (Suggests house dust mites, molds).
Does the patient have mold visible in any part of his or her home? (Suggests molds).
Has the patient seen cockroaches or rodents in his or her home in the past month? (Suggests significant exposure).
Assume exposure to house dust mites unless patient lives in a semiarid region. However, if a patient living in a semiarid region uses a swamp cooler, exposure to house dust mites must still be assumed.
Do symptoms get worse at certain times of the year? (If yes, ask when symptoms occur).
Early spring? (Trees).
Late spring? (Grasses).
Late summer to autumn? (Weeds).
Summer and fall? (Alternaria, Cladosporium, mites).
Cold months in temperate climates? (Animal dander).
Tobacco smoke
Does the patient smoke?
Does anyone smoke at home or work?
Does anyone smoke at the child's daycare?
Indoor/outdoor pollutants and irritants
Is a wood-burning stove or fireplace used in the patient's home?
Are there unvented stoves or heaters in the patient's home?
Does the patient have contact with other smells or fumes from perfumes, cleaning agents, or sprays?
Have there been recent renovations or painting in the home?

Workplace exposures
Does the patient cough or wheeze during the week, but not on weekends when away from work?
Do the patient's eyes and nasal passages get irritated soon after arriving at work?
Do coworkers have similar symptoms?
What substances are used in the patient's worksite? (Assess for sensitizers).
Rhinitis
Does the patient have constant or seasonal nasal congestion, runny nose, and/or postnasal drip?
Gastroesophageal reflux disease (GERD)
Does the patient have heartburn?
Does food sometimes come up into the patient's throat?
Has the patient had coughing, wheezing, or shortness of breath at night in the past four weeks?
Does the infant vomit, followed by cough, or have wheezy cough at night? Are symptoms worse after feeding?
Sulfite sensitivity
Does the patient have wheezing, coughing, or shortness of breath after eating shrimp, dried fruit, or processed potatoes or after drinking beer or wine?
Medication sensitivities and contraindications
What medications does the patient use now (prescription and nonprescription)?
Does the patient use eyedrops? What type?
Does the patient use any medications that contain beta-blockers?
Does the patient ever take aspirin or other nonsteroidal antiinflammatory drugs?
Has the patient ever had symptoms of asthma after taking any of these medications?

Fig. 1. Assessment questions for environmental and other factors that can make asthma worse. These questions are examples and do not represent a standardized assessment or diagnostic instrument. The validity and reliability of these questions have not been assessed. (*From* National Heart, Blood, and Lung Institute. Expert panel report 3 (EPR 3): guidelines for the diagnosis and management of asthma. NIH Publication no. 08-4051.)