When to "Undiagnose" Asthma

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Asthma may not be a permanent diagnosis in adults. A study finds that up to one-third of adults with clinician-diagnosed asthma no longer have it after 5 years.

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PRACTICE CHANGER

Consider tapering medications and retesting spirometry in adults with well-controlled asthma, as many may no longer have the disease.[1]

STRENGTH OF RECOMMENDATION

A: Based on a high-quality prospective cohort study and consistent findings in other studies.[1]

Two years ago, a now 45-year-old woman was diagnosed with asthma based on her history and physical exam findings; she was prescribed an inhaled corticosteroid and a bronchodilator rescue inhaler. She has had no exacerbations since. Should you consider weaning her off the inhalers?

Asthma is a prevalent problem; 8% of adults ages 18 to 64 have the chronic lung disease.[2] Diagnosis can be challenging, partially because it requires measurement of transient airway resistance, and treatment entails significant costs and possible adverse effects. Without pulmonary function measurement or trials off medication, there is no clinical way to differentiate patients with well-controlled asthma from those who are being treated unnecessarily. Not surprisingly, studies have shown that ruling out active asthma and reducing medication use are cost effective.[3,4] This study followed a cohort of patients to see how many could be weaned off their asthma medications.

STUDY SUMMARY

About one-third of adults with asthma are "undiagnosed" within 5 years

The researchers recruited participants from the general population of the 10 largest cities and surrounding areas in Canada by randomly dialing cellular and landline phone numbers and asking about adult household members with asthma.[1] The researchers focused on those with a recent (<5 years) asthma diagnosis to represent contemporary diagnostic practice and make it easier to collect medical records. Participants lived within 90 minutes of 10 medical centers. Patients were excluded if they were using long-term oral steroids, were pregnant or breastfeeding, were unable to tolerate spirometry or methacholine challenges, or had a smoking history of >10 pack-years.

Of the 701 patients enrolled, 613 (87.4%) completed all study assessments. Patients progressed through a series of spirometry tests and were then tapered off their asthma-controlling medications.

The initial spirometry test confirmed asthma if bronchodilators caused a significant improvement in forced expiratory volume in one second (FEV_1). Patients who showed no improvement took a methacholine challenge 1 week later; if they did well, their maintenance medications were reduced by half. About 1 month later, another methacholine challenge was given; if the patient did well, maintenance medications were stopped and the patient underwent a third methacholine challenge 3 weeks later.

Asthma was confirmed at any methacholine challenge if there was a 20% decrease in FEV_1 from baseline at a methacholine concentration of ≤8 mg/mL; these patients were restarted on appropriate medications. If current asthma was ruled out, follow-up bronchial challenges were repeated at 6 and 12 months.

Results. Among the patients with clinician-diagnosed asthma, 33.1% no longer met criteria for an asthma diagnosis. Of

those who no longer had asthma, 44% had previously undergone objective testing of airflow limitation. Another 12 patients (2%) had other serious cardiorespiratory conditions instead of asthma (eg, ischemic heart disease, subglottic stenosis, and bronchiectasis).

During the 1-year follow-up period, 22 (10.8%) of the 203 patients who were initially judged to no longer have asthma had a positive bronchial challenge test; 16 had no symptoms and continued to do well without any asthma medications. Six (3%) presented with respiratory symptoms and resumed treatment with asthma medications, but only 1 (0.5%) required oral corticosteroid therapy.

WHAT'S NEW?

Asthma meds of no benefit for one-third of patients taking them

This study found that one-third of patients with asthma diagnosed in the past 5 years no longer had symptoms or spirometry results consistent with asthma and did well in the subsequent year. For those patients, asthma medications appear to have no benefit. The Global Institute for Asthma recommends stepping down treatment in adults with asthma that is well controlled for 3 months or more.[5] Patients with objectively confirmed asthma diagnoses were more likely to still have asthma in this study—but more than 40% of patients who no longer had asthma had been objectively proven to have the disease at the time of diagnosis.

CAVEATS

High level of rigor; no randomized trial

This study used a very structured protocol for tapering patients off their medications, including multiple spirometry tests (most including methacholine challenges) and oversight by pulmonologists. It is unclear whether this level of rigor is necessary for weaning in other clinical settings.

Also, this study was not a randomized trial, which is the gold standard for withdrawal of therapy. However, a cohort study is adequate to assess diagnostic testing, and this could be considered a trial of "undiagnosing" asthma in adults. These results are consistent with those of another study of asthma disappearance in patients with and without obesity; in that study, about 30% of patients in either group no longer had a diagnosis of asthma.[6]

Using random dialing is likely to have broadened the pool of patients this study drew upon. Also, there is a possibility that the patients who were lost to follow-up in this study represented those who had worsening symptoms. Some patients with mild asthma may have a waxing and waning course; it is possible that the study period was not long enough to capture this. In this study, only about 3% of patients who had their medications stopped reported worsening of symptoms.

CHALLENGES TO IMPLEMENTATION

"Undiagnosis" is unusual

Using objective testing may provide some logistical or financial challenges for patients. Furthermore, "undiagnosing" a chronic disease like asthma is not a clinician's typical work, and it may take some time and effort to educate and monitor patients throughout the process. **CR**

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