MANAGEMENT OF ASTHMA can be complex, as clinicians wrestle with an increasing array of drugs and other management tools. In 1997 the National Institutes of Health published its Guidelines for the Diagnosis and Management of Asthma. Data from multiple sources suggest that adherence to these Guidelines can substantially improve patient outcome. This issue of the CD Summary reviews these Guidelines, as part of a new program at the Health Division to improve the care of people with asthma in Oregon.

ASTHMA IS INCREASING

National data suggest that asthma prevalence and mortality have increased steadily for the last 15 years. Today, 17 million Americans are estimated to have asthma. Among adults in Oregon, the prevalence of asthma has risen to nearly 9%. Why asthma is increasing is not clear, although theories abound. More frequent diagnosis of asthma and the increased life expectancy of asthmatics from better management of asthma probably play some role. Changes in the environment, such as increased air pollution, and increased exposure to cigarette smoke in utero have also been advanced as possible contributing factors. And one theory suggests that the decline in childhood exposure to infectious diseases and other immune system stimuli has resulted in increased allergen sensitivity.

Asthma is not an equal opportunity disease. The risk is higher for females than males—in Oregon, 1.8 times so. African-Americans and American Indians are more at risk than whites, with a prevalence among adults of 10% and 11%, respectively. Nationally, the annual asthma hospitalization rate for blacks is over three times that for whites (35.5 v. 10.9/10,000), and the death rate more than twice that of whites (38.5 v. 15.1 per million population per year).

The gap between the prevalence of asthma and the hospitalization and death rates for asthma among African-Americans emphasizes the need for improved outpatient treatment of asthma. Data suggest that appropriate outpatient management can greatly reduce the need for asthma-related visits to hospitals and funeral parlors. Which brings us back to…

WHAT’S IMPORTANT

The Guidelines outline an easy to use classification system for asthma severity that is based on objective measures (symptom frequency, activity limitations, frequency of medication use, and peak flow measurements). Each severity category is managed with the use of specific classes of medication. This is almost a “point and click” guide to asthma care: figure out which severity category your patient belongs in, and bingo, you know which types of medication they should be on. The Guidelines divide asthma medications into two classes: those used for long-term control (e.g., anti-inflammatory drugs and long-acting bronchodilators), and those used for quick relief, such as short-acting bronchodilators.

Another important aspect of treatment is the aggressive use of corticosteroids, particularly inhaled preparations. This recommendation is based on data showing that for some asthmatics continued inflammation causes remodeling of the basement membrane in the alveoli which leads to thickening of that membrane. This reduces the capacity of gases to cross that membrane, and also increases the elasticity of lung tissue, causing an irreversible decrement in lung function. Given the low level of side effects from inhaled steroids, the Guidelines recommend their use as a first line agent for all but those with the most mild class of asthma.

Finally, the Guidelines emphasize the importance of patient education and self-management in asthma care. Teaching patients how to avoid their environmental triggers, convincing patients to take their long-term control medications even in the absence of symptoms, and teaching patients when they need to step up their medication or seek evaluation by their health care provider are important components of asthma care. The Guidelines advocate the use of a clearly written self-management plan for all asthmatics.

Do the Guidelines work? Numerous studies suggest that adherence to the Guidelines improves patient outcome. One study even suggests that the improved outcome achieved by asthma specialists is due in large part due to adherence to the Guidelines.

SO WHERE DO I GET A COPY?

You can download your own copy of the Guidelines (all 146 pages) from the National Heart Lung and Blood Institute’s website, http://www.nhbi.nih.gov/guidelines/asthma/asthgdln.htm. For your easy reference we’ve distilled some of the most critical information in the Guidelines into the table on the reverse side of this sheet. Of course, both the full text of the Guidelines and our table are general guidelines to assist in clinical decision-making, and are not intended to be a specific prescription for individual patients.

THE OREGON ASTHMA PROGRAM

The Health Division recently received a grant from CDC to address the burden of asthma in Oregon from a public health perspective. We will be working with providers, health care organizations, patients and their advocates, and community partners to reduce the burden of asthma in Oregon. For more information about the Oregon Asthma Program, call 503/731-4025. Operators are standing by.

REFERENCES

2. Behavior Risk Factor Surveillance System (BRFSS). An annual telephone survey addressing a wide variety of health-related behaviors and demographic characteristics.
## Management of Asthma in Adults and Children*

### Classification of Severity and Therapy Recommendations†

<table>
<thead>
<tr>
<th>Step</th>
<th>Symptoms</th>
<th>Nocturnal Symptoms</th>
<th>Lung Function</th>
<th>Long-Term Control</th>
<th>Quick Relief</th>
<th>Education</th>
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<tbody>
<tr>
<td><strong>Step 1</strong> Mild Intermittent</td>
<td>Symptoms ≤2 times a week.</td>
<td>Asymptomatic and normal PEF between exacerbations</td>
<td>Exacerbations brief (from a few hours to a few days); intensity may vary</td>
<td>≤2 times a month</td>
<td>PEV₁ or PEF &gt;2800 predicted</td>
<td>No daily medication needed.</td>
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<tr>
<td></td>
<td>Symptom</td>
<td></td>
<td></td>
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<tr>
<td><strong>Step 2</strong> Mild Persistent</td>
<td>Symptoms &gt;2 times a month.</td>
<td>Exacerbations may affect activity</td>
<td>≥2 times a month</td>
<td>PEV₁ or PEF ≥2800 predicted</td>
<td>PEF variability ≥20%</td>
<td>One daily medication:</td>
</tr>
<tr>
<td></td>
<td>Expiration</td>
<td></td>
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<tr>
<td><strong>Step 3</strong> Moderate Persistent</td>
<td>Daily symptoms</td>
<td>Daily use of inhaled short-acting beta₂-agonist</td>
<td>Exacerbations affect activity</td>
<td>≥1 time a week</td>
<td>PEV₁ or PEF ≥60%&lt;80% predicted</td>
<td>PEF variability ≥30%</td>
</tr>
<tr>
<td><strong>Step 4</strong> Severe Persistent</td>
<td>Continuous symptoms</td>
<td>Limited physical activity</td>
<td>Frequent exacerbations</td>
<td>Frequent</td>
<td>PEV₁ or PEF ≤50% predicted</td>
<td>PEF variability ≥30%</td>
</tr>
</tbody>
</table>

* Magnifying glass not included.
† Preferred treatment is shown in bold print.