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PART I

Do you have asthma?

Asthma is common and important!

Asthma is common and places a huge economic burden on society. Its prevalence is increasing worldwide. About 22 million Americans suffer from asthma. Collectively, people who have asthma have more than 497,000 hospitalizations annually. In the year 2002 alone, 4,261 people died of asthma.

Asthma Mechanism & Asthma triggers

Asthma causes difficulty breathing due to narrowing of airways. The narrowing is caused by constriction of bronchial tubes, swelling of airway lining and production of excess mucus. This happens over a period of time or suddenly, resulting in persistent cough, wheezing, tightness of chest and difficulty breathing. Swelling or inflammation of the airway lining is the primary event which makes the bronchial tubes more irritable (twitchy) and constrict in response to stimuli.

The inflammation is caused by exposure to triggers such as viral upper respiratory tract infections, allergy causing substances (animal dander, dust, mold and pollens) and irritants (smoke, pollution, chemicals, cosmetics, paint etc.). Exercise and cold air are two other important triggers for asthma. About 21 percent of adults and 5 percent of children who have asthma have aspirin-induced asthma. Such people usually have a combination of the following findings: Chronic sinusitis, nasal polyps, and asthma. Some people with asthma can be sensitive to sulfites, a commonly used food preservative. Consuming foods with sulfites could exacerbate asthma symptoms in such patients. Reading food labels carefully and avoiding foods with sulfites are the remedies. Nonselective beta blocker medications commonly used to treat heart disease, high blood pressure, migraine, hand tremors, hyperthyroidism, glaucoma etc can aggravate asthma symptoms. Food allergy as a cause for asthma is uncommon. But if one has both food allergy and asthma, the risk of anaphylaxis is higher and more severe.

Asthma is a disease with wide variation in presentation. Asthma is a product of gene-environment interaction. By this I mean that genetically susceptible people who are exposed to triggers develop allergic sensitization and asthma. Close family members may have rhinitis, asthma, eczema and other types of allergies. Respiratory Syncytial Virus infections (RSV) during early childhood increase the likelihood of developing asthma by 40%. Children who are exposed to cigarette smoke, cockroach, dust mites and *Alternaria* mold spore are at increased risk for developing asthma. Children born in families where

one or both parents suffer from asthma or eczema are likely to develop asthma. Asthma could be found in association with chronic sinus infections, hay fever, acid reflux or sleep apnea. Treating these conditions adequately will make the asthma better.

Asthma can be treated effectively!

Asthma could be potentially dangerous. Unlike in the past, we have several excellent medications available now to treat asthma. Surprisingly the asthma mortality has decreased only slightly in the last 30 years. This could be related to lack of access to medical care due to poor socioeconomic conditions, underestimating the severity of asthma and poor compliance with medications. Patient education plays a very crucial role in understanding and treating asthma. Programs in which both physicians and patients become partners in managing asthma produce better results. Educating patients with respect to how to avoid triggers, monitor asthma, take care of acute asthma exacerbations (with written asthma action plan) and how to use asthma devices will go a long way in controlling asthma better.

PART II

Asthma Medications

Asthma medications are broadly divided into two groups: Controller medications and rescue medications. Controller medications include long-acting bronchodilator medications such as Serevent and Foradil, steroid inhalers such as Flovent, Pulmicort, Qvar, and beclomethasone, combination products such as Advair and Symbicort, older medications such as theophylline and newer medications such as Singulair, Accolate and Zflo. The controller medications work by controlling inflammation of the airway lining and thereby help control asthma better. Since inflammation is present all year round even in cases of mild asthma, controller medications are to be taken year round. Controller medications will not relieve acute asthma symptoms and therefore should not be used to treat acute asthma exacerbations. However, regular use of controller medications helps in reducing the frequency and severity of asthma exacerbations.

Some people are put off by the word ‘steroids’ and they do not want to use them due to fear of side effects or due to confusion with ‘anabolic steroids’ used illegally by athletes. Inhaled steroids used in the treatment of asthma are quite different from anabolic steroids and are safe in mild to moderate doses especially when regularly monitored by your physician. Periodic eye examination to detect early glaucoma and cataracts, regular monitoring of height and bone density and regular use of calcium and vitamin D supplements will prevent or minimize the ocular and bone complications of inhaled or oral steroids.

Rescue medications are exemplified by albuterol (ProAir, Proventil, and Ventolin), Levalbuterol (Xopenex) and Pirbuterol (MaxAir). These medications help by opening up bronchial tubes by relaxing muscles in them. As the name implies, these medications are used to treat acute asthma exacerbations on an as needed basis. Regular and frequent use

of these medications will worsen asthma symptoms and can cause serious adverse side effects.

A new medication for asthma!

For patients who have uncontrolled asthma in spite of using asthma controller medications and whose asthma is allergy induced (as demonstrated by allergy blood tests and allergy skin tests), there is a new medication available. It is marketed under the name Xolair. It is given as an injection once or twice a month. It reduces the level of allergy causing antibody protein in the blood and thereby makes asthma better. This medication appears to be promising. It is expensive and needs prior authorization from insurance companies before administration. It is currently approved for children above 12 and adults. Rarely can it be associated with hives and anaphylaxis (severe form of allergic reaction) and both physicians and patients should be equipped to tackle this problem when it arises.

An old but often underutilized treatment option for asthma

A recent expert panel convened by the NIH (National Institute of health) recommends using allergy injections to treat asthma sufferers when there is clear evidence of a relationship between asthma symptoms and exposure to an allergen to which the patient is sensitive. If use of allergy injections is elected, it should be administered only in a physician's office where equipment and trained personnel are available to treat any rare life-threatening reaction that can follow. One study conducted in children with nasal allergies showed that allergy injections reduced the development of asthma in such children. Adequate treatment of nasal allergies by allergy avoidance measures and allergy medications (prescription nasal sprays) also help control asthma better.

Consider inactivated influenza vaccination for patients who have asthma. It is safe for children more than 6 months of age and adults. The Advisory Committee on Immunization Practices of the CDC recommends influenza vaccination for persons who have asthma, because they are considered to be at risk for complications from influenza. However, the vaccine should not be given with the expectation that it will reduce either the frequency or severity of asthma exacerbations during the influenza season. Persons who are allergic to eggs or other components in the flu vaccine should not receive it.

About the author:

Natarajan Asokan, M.D., F.A.A.P. is a board certified allergist and immunologist and a board certified pediatrician with over 25 years of experience as a physician and 7 years of experience as a practicing allergist & immunologist. He treats adults and children with various allergy & immunology problems. He can be reached at 1739, Beverly Ave, Suite 118, Kingman, AZ 86409, Tel: 928-681-5800, Fax: 928-681-5801, or www.trinityallergy.com