

Special Conditions That May Have an Impact on Asthma

When asthma is not optimally controlled, there may be issues with compliance or adherence to the therapeutic program or issues with proper medication delivery. The following special conditions should be considered in poorly controlled asthma-

1. Asthma and Pregnancy
2. Nocturnal Asthma
3. Exercise-induced Asthma
4. Nasal/Sinus Disease and Asthma
5. Gastroesophageal Reflux and Asthma
6. Aspirin-sensitive Asthma
7. Air Pollution and Asthma
8. Psychological Issues and Asthma
9. Asthma and the School
10. Socioeconomic, geographic and Cultural Factors and Asthma

1. Asthma and Pregnancy-

- There is more risk to the mother and developing fetus from poorly controlled asthma than there is from the medications used to control asthma.
- Asthmatic patients should not smoke, especially during pregnancy.
- Identification and avoidance of potential triggers of asthma is essential during pregnancy.
- Assessment of asthma should include regular measurements of pulmonary function during pregnancy.
- Pregnancy is not a contraindication to continued allergen vaccine therapy in patients who are at maintenance.
- Additional considerations apply to the management of asthma during labor and delivery.
- In general, the same medications used during pregnancy are appropriate during labor and delivery.

2. Nocturnal Asthma-

- A high percentage of deaths occur during nocturnal and early morning periods.
- Nocturnal asthma has been associated with factors such as decreased pulmonary function, hypoxemia, decreased mucociliary clearance, and circadian variations of histamine, epinephrine, and cortisol concentrations.
- A general goal of asthma therapy should be the complete control of nocturnal symptoms.

- Longer acting, sustained-release theophylline preparations, long-acting oral Beta agonists, or long acting inhaled Beta agonists may be an effective way to control nocturnal asthma in many patients.
- Better overall control of the patient's asthma may be necessary before nocturnal symptoms will be adequately controlled (i.e., avoidance, immunotherapy, and daytime medications, especially anti-inflammatory drugs such as corticosteroids or Cromolyn).

3. Exercise-induced Asthma

- Exercise-induced asthma (EIA) occurs in up to 90% of patients with asthma.
- EIA is probably triggered by heat and water loss from the respiratory tract, which causes mediator release resulting from bronchial hyperosmolality.
- Inhalation of a Beta 2-agonist 15-30 minutes before exercise is the treatment of choice for EIA.
- Inhaled Cromolyn sodium, taken alone or in combination with an inhaled Beta 2- agonist 15-30 minutes before exercise, can also effectively prevent or modify EIA.
- Pretreatment with theophylline, anticholinergic agents, antihistaminic agents, and other medications may benefit some patients with EIA
- General stabilization of the patient's asthma may be required before effective control of EIA can be achieved.
- Non-pharmacologic methods can also be effectively used in some patients to prevent EIA (e.g., exercise under conditions in which warm, humid air is inhaled).

4. Nasal/Sinus Disease and Asthma-

- Frequently there is an association between asthma and sinusitis, and improvement in asthma may occur when sinusitis is properly treated.
- Sinusitis should be considered in patients with refractory asthma.
- Evaluation of sinus disease may require sinus radiographs, CT scans, and/or endoscopic procedures.
- Many local and/or systemic factors may increase the risk of sinusitis. Certain diseases, such as cystic fibrosis, and local factors, such as nasal polyps, may increase the risk of developing sinusitis.
- Nasal polyps may occur in association with sinus disease and both conditions may affect asthma.

5. Gastroesophageal reflux (GER) and Asthma-

- GER occurs commonly in patients with asthma.
- GER should be suspected in patients with nocturnal asthma or in patients who are not responding adequately to optimal medical management.
- A number of objective diagnostic modalities are available for establishing a relationship between GER and asthma.
- Medical or surgical treatment of GER in asthmatic patients may improve their respiratory symptoms.

- Surgical correction of GER should only be considered when medical therapy is unsuccessful and a causal relationship between GER and asthma has been objectively established.

6. Aspirin-sensitive asthma/nonsteroidal anti-inflammatory drug/preservative sensitivity-

- Aspirin-sensitive asthma (ASA) and nonsteroidal anti-inflammatory drug (NSAID) idiosyncrasy occurs in up to 10-15% of asthmatic patients and in 30-40% of asthmatic patients with nasal polyps and pansinusitis. These reactions are non IgE mediated and designated as idiosyncrasies.
- Ultimately, many of these patients become steroid dependent.
- ASA desensitization may be a useful therapeutic adjunct in some of these patients, especially those who have concurrent diseases that require ASA or NSAIDS.
- Sulfite additives in drugs and foods may induce adverse reactions in susceptible asthmatic patients.
- Tartrazine in foods or drugs may induce asthma in a small number of patients with ASA idiosyncrasy.
- Similar to ASA reactions, almost all of the reactions to tartrazine are not IgE mediated.
- Asthma may occur in a few monosodium glutamate-susceptible patients after challenge with this food-flavoring agent.
- Several other dye and preservative additives in foods and drugs have also been implicated as inducers of asthma.

7. Air pollution and asthma-

- Inhalation of sulfur dioxide, nitrogen dioxide, or ozone is capable of inducing bronchospasm in patients with asthma.
- One of the common source of air pollution in residential areas is household wood burning devices.

8. Psychological Issues and Asthma-

- Asthma affects psychological and social aspects of life for virtually all patients with this disease.
- The patient may or may not be aware of the presence of psychological problems, which may constitute significant impediments to the optimal management of asthma.
- The management of psychological or social problems that accompany asthma depends on the extent to which they interfere with medical management or produce severe dysfunction in the patient's life.
- Age and maturity are important considerations in both the medical and psychological treatment of asthma.
- Family members of patients with severe asthma or asthma that is out of control require support from the clinician because of the demands of caring for an individual with asthma. Referral to support groups and/or counseling can be helpful in these situations.

9. Asthma and the school-

- Asthma must be identified early to optimize treatment that can decrease school absenteeism and increase opportunities for participation in physical activity.
- Asthma can be effectively treated in most children by the use of readily available inhaled medications.
- Every effort should be made to normalize physical activity in children with asthma.
- Education programs for patients, parents, and teachers should be encouraged to provide better management of asthma in the school setting.
- Schools should be provided with written action plans in order to assist with maintenance medicine and treatment of exacerbations.
- Consider encouraging improved awareness among school administrators and teachers about when it is appropriate for children to carry inhalers with them.

10. Socioeconomic, geographic, and cultural factors and asthma-

- Asthma may present special problems in management related to living conditions, geographic location, availability of and access to health care professionals and health care facilities, socioeconomic status of the patient, and cultural differences in orientations to disease.
- Exposure to outdoor and indoor respiratory pollutants and allergens may be intensified in relation to socioeconomic and geographic factors.
- The selection of medication for the treatment of specific patients with asthma should take into consideration the education of the patient, the patient's mental status, the economic status of the patient, cultural approaches to the use of medications, and accessibility to medical care while providing the best approach to treatment possible for that individual patient.

CONSULTATION WITH AN ASTHMA SPECIALIST-

- Optimal care for asthma emerges, according to current evidence, when specialists and generalists collaborate or co-manage children with asthma, especially in complex cases.
- Inaccessibility to specialists who care for asthma may lead to episodic care, lack of follow-up, inadequate patient education, and possibly increased asthma mortality in urban African-Americans.
- Inaccessibility to specialists who care for asthma can be the result of difficult geographic or economic conditions, lack of health care coverage, or lack of appropriate referrals.
- The cooperative interaction between the patient and/or the patient's representative(s), the primary care physician/provider, and the asthma specialist is necessary to maximize the possibility of meeting the goals of asthma therapy.

- It is important that the primary care physician/provider recognize the contribution that can be made by the asthma specialist in the management of asthma.
- The asthma specialist should recognize the importance of the primary care physician/provider in the continuing care of patients with asthma, which enhances the possibility of a successful outcome for the patient.
- Active participation of an asthma specialist in the continuing care of patients with asthma is associated with lower asthma morbidity, including fewer emergency room visits, decreased hospitalizations, reduced length of stay in the hospital, reduced number of day lost from school and work, and a reduction in the global cost of asthma care.
- The presence of any of the following is an indication for a patient to consult an asthma specialist, instability of the patient's asthma, the need for identification of possible allergenic or non-allergenic triggers, patient education and when the diagnosis of asthma is in doubt. For patients who meet these criteria, consultation with an asthma specialist should be obtained early during the treatment program.

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