

Exercise Induced Collapse: **Bronchospasm (Acute Asthma)**

See also Exercise Induced Asthma (EIA)

Background

1. May be precipitated by:
 - Exercise
 - Environmental conditions
 - Athletes noncompliant with medications
2. Incidence 10-15% in general population
 - Elite athletes-incidence from 10-50%

Pathophysiology

1. Vigorous activity demands normal nasal breathing and supplemental mouth breathing
 - Leads to inhalation of nonhumidified and cold air
 - Body increases warm blood to linings of bronchial tree
 - Results in edema
 - Constriction of vessels causing obstruction of airflow
2. EIB: transient obstruction of airflow
 - Occurs 5-15 min after onset of exercise
 - Peaks approximately 10 minutes after exercise
 - Lasts 30-60 min
3. Late-acting mediators may create rebound symptoms 3-12 hr after primary flare.

Diagnostics

1. Thorough patient history
2. Peak expiratory flow meter before and after vigorous exercise
3. Formal laboratory evaluation with methacholine challenge test

Therapeutics

1. If unconscious:
 - Maintain airway access
 - Treat with epinephrine or terbutaline
2. If conscious:
 - Give albuterol by inhaler (up to 6 puffs) or by nebulizer treatment

Prevention

1. Optimize physical conditioning
2. Adequate warm-up
3. Mild symptoms: inhaled beta agonist 15-20 min before exercise
4. Severe symptoms:
 - Consider cromolyn, inhaled corticosteroids, long-acting beta agonist, leukotriene-receptor antagonists
5. Activities less likely to cause EIA:
 - Walking, jogging, hiking, golf, baseball, gymnastics, all indoor sports

6. Warm up/stretching exercises in stages of increasing intensity
7. Cool down after exercise to help slow change of air temperature in lungs
8. Wearing scarf or mask during exercise in cool weather events

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Author: Tony Chang, MD, *University of Nevada Reno FPRP*

Editor: Carol Scott, MD, *University of Nevada Reno FPRP*