

Lung Abscess

Defⁿ :

- It is a localized necrotic lesion of the lung parenchyma containing
 - purulent material,
 - the lesion collapses &
 - forms a cavity.
- **Causes** :
 - Staphylococcus aureus: -

Lung Abscess...

Risk factors:

- Aspiration
- Mechanical / functional obstruction of bronchi by tumor, foreign body, or bronchial stenosis
- Tuberculosis, chest trauma, necrotizing pneumonia, pulmonary embolism

C/M:-

- Fever
- Productive cough of moderate to copious amounts of foul – smelling sputum
- Pleurisy, chest pain, dyspnea, weakness anorexia, weight loss

Lung Abscess...

DX: -

- History
- Dullness on percussion & decreased or absent breath sounds._
- Crepitation
- Chest x – ray, bronchoscope
- Sputum culture

Lung Abscess...

Medical MX: -

- Admit the patient
 - Cloxacillin 500mg IV Qid & change to po after 3 to 4 days
 - Postural drainage & chest physiotherapy
 - High protein & caloric diet
 - Duration of antibiotic is for 6 weeks
 - Surgical intervention is rare.

Lung Abscess...

- **Prevention**

- Appropriate antibiotic therapy before any dental procedure
- Oral hygiene
- Appropriate treatment of pneumonia

- **Nursing Intervention**

- Administer drugs as prescribed & monitor for any adverse effects.
- Chest physiotherapy
- Deep breathing & coughing exercise
- Proper nutrition /high protein & calories diet/ intake encouragement.
- Emotional support.
- Mouth care

Pleurisy (pleuritis)

- It is an inflammation of both layers of the pleura

C/M: - severe, sharp, ‘’ knifelike’’ pain during inspiration

- friction rub
- The pain may be localized or radiates to the shoulder / abdomen
- **Pleurisy may develop with: -**
 - Pneumonia
 - URTI
 - Tuberculosis
 - Pulmonary embolism

Pleurisy (pleuritis)...

Dx: -

- Chest X- rays
- Sputum examination
- Pleural fluid analysis
- Pleural biopsy

Pleurisy (pleuritis)...

Medical Mx: -

- Treat the underlying disease /pneumonia. . . /
- Analgesics / Indometacin 25mg p.o Tid for 1week

Nursing Intervention

- Turn frequently on the affected side to splint the chest wall / this lessen the stretching of the pleura/.
- Emotional support & teaching

Pneumothorax

- It is the accumulation of air in the pleural space occurring spontaneously from injury or disease.
- In patients with chest trauma it is usually the result of a laceration to the lung parenchyma, tracheobronchial tree or esophagus.
- Patient's clinical status depends on the rate of air leakage and size of wound and on previous respiratory condition.

1. Tension pneumothorax: -

- occurs when air is drawn in to the pleural space from a lacerated lung or through a small hole in the chest wall.
 - Tension / pressure/ is built up with in the pleural space, which caused *the lung to collapse& the heart, great vessels, & trachea shift toward unaffected parts*
 - Impairs respiratory & circulatory function
 - Air enters but can not leave

Tension pneumothorax..

Management

- Temporary decompression with syringe and needle inserted in to second intercostals space
- Chest tube drainage of pleural space to evacuate air

2. Spontaneous Pneumothorax

- These occurs in healthy individuals; is usually due to rupture of a sub pleural bleb of the lung.
- Treatment:- generally non-operative if pneumothorax is not too extensive, needle aspiration or chest tube drainage may be necessary.
- Surgical intervention (thoracotomy) for patients with recurrent spontaneous pneumothorax

C/M: -

- Air hunger
- Hypotension
- Tachycardia
- Profuse diaphoresis
- Cyanosis

Medical Mx: -

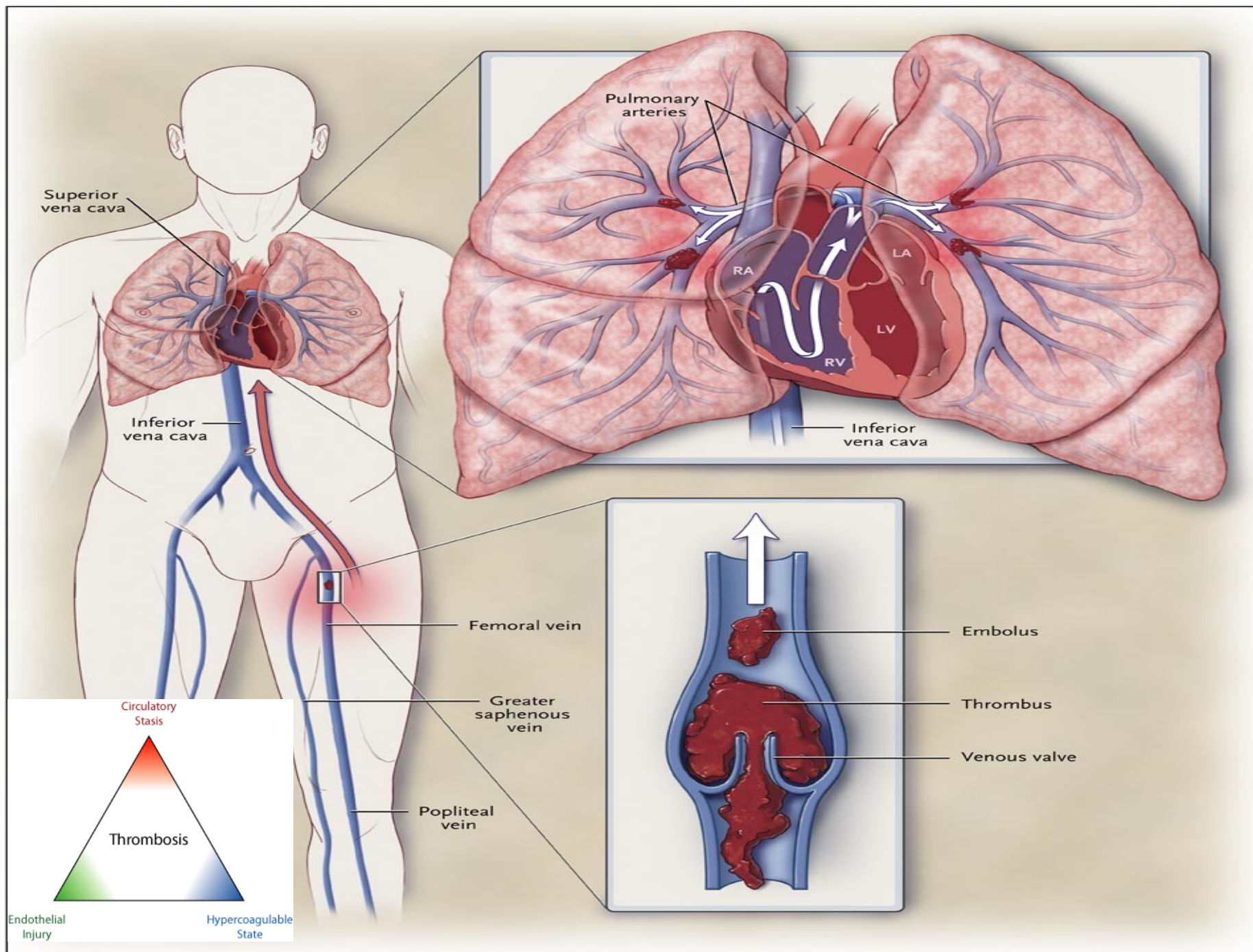
- Give O_2
- Withdraw air by inserting needle over 2nd intercostals space
- Close the wound

Pulmonary Embolism

- Obstruction of one or more pulmonary arteries by
 - a thrombus that originates somewhere in the venous system or
 - In the right side of the heart

Pathophysiology

- When a thrombus completely or partially obstructs a pulmonary artery or its branches,
- The alveolar dead space is increased.
- The area, although continuing to be ventilated, receives little or no blood flow.
- Therefore, gas exchange is impaired or absent in this area.
- In addition, various substances are released from the clot and surrounding area that cause regional blood vessels and bronchioles to constrict.
- This results in an increase in pulmonary vascular resistance.
- This reaction compounds the ventilation–perfusion imbalance



Pulmonary Embolism...

Risk Factors

- **Venous stasis / slowing of blood flow in veins/ which may be due to:-**
 - Prolonged immobilization / post operative/
 - Prolonged period of sitting
 - Varicose veins
 - Spinal cord injury
- **Hypercoagulability due to:**
 - Injury
 - Tumor
 - Increased platelet count

Pulmonary Embolism...

- **Venous Endothelial Disease such as:-**

- Thrombophlebitis

- **Certain disease states such as:-**

- Trauma

- Postoperative/postpartum period

Pulmonary Embolism...

Clinical Manifestation: -

- May be non-specific
 - Chest pain is the commonest symptom
 - Dyspnea is the second most common symptom
 - Tachypnea & Haemoptysis
 - Tachycardia / rapid & weak pulse/
 - Cough & diaphoresis
 - Syncope & sudden death

Pulmonary Embolism...

Diagnostic evaluation

- chest x – ray
- pulmonary angiography

Pulmonary Embolism...

Emergency Interventions

- Oxygen administration to relieve hypoxemia, respiratory distress, & cyanosis
- Open IV infusion
- Catheterize to monitor urinary output
- IV diuretics

Pulmonary Embolism...

Medical Management

- **Anticogulation therapy**
 - Heparin 5,000 units IV followed by continuous infusion of 1,000 unit per hour is used to prevent recurrence of emboli.

Surgical Intervention

- Pulmonary embolectomy

Pulmonary Embolism...

Nursing Intervention

- Prevention:- preventing thrombus formation / ambulation, active & passive exercise to prevent venous stasis /.
- Pain Management
- Oxygen administration
- patient education
- coping with anxiety

Pulmonary Embolism...

Prevention:-

- Prevent deep vein thrombosis / active leg exercise to avoid venous stasis, early ambulation, & use of elastic stockings /.
- Anticoagulant therapy
- Avoid leaving IV catheter in veins for prolonged periods.
- Elevate legs above level of heart
- Advice against habits that increase venous stasis such as: -
 - Crossing leg
 - Sitting or lying down for prolonged period
 - Wearing constricting clothing

- **Asthma**

Asthma

■ A chronic inflammatory disease of the airways that characterized by reversible airflow obstruction which causes:

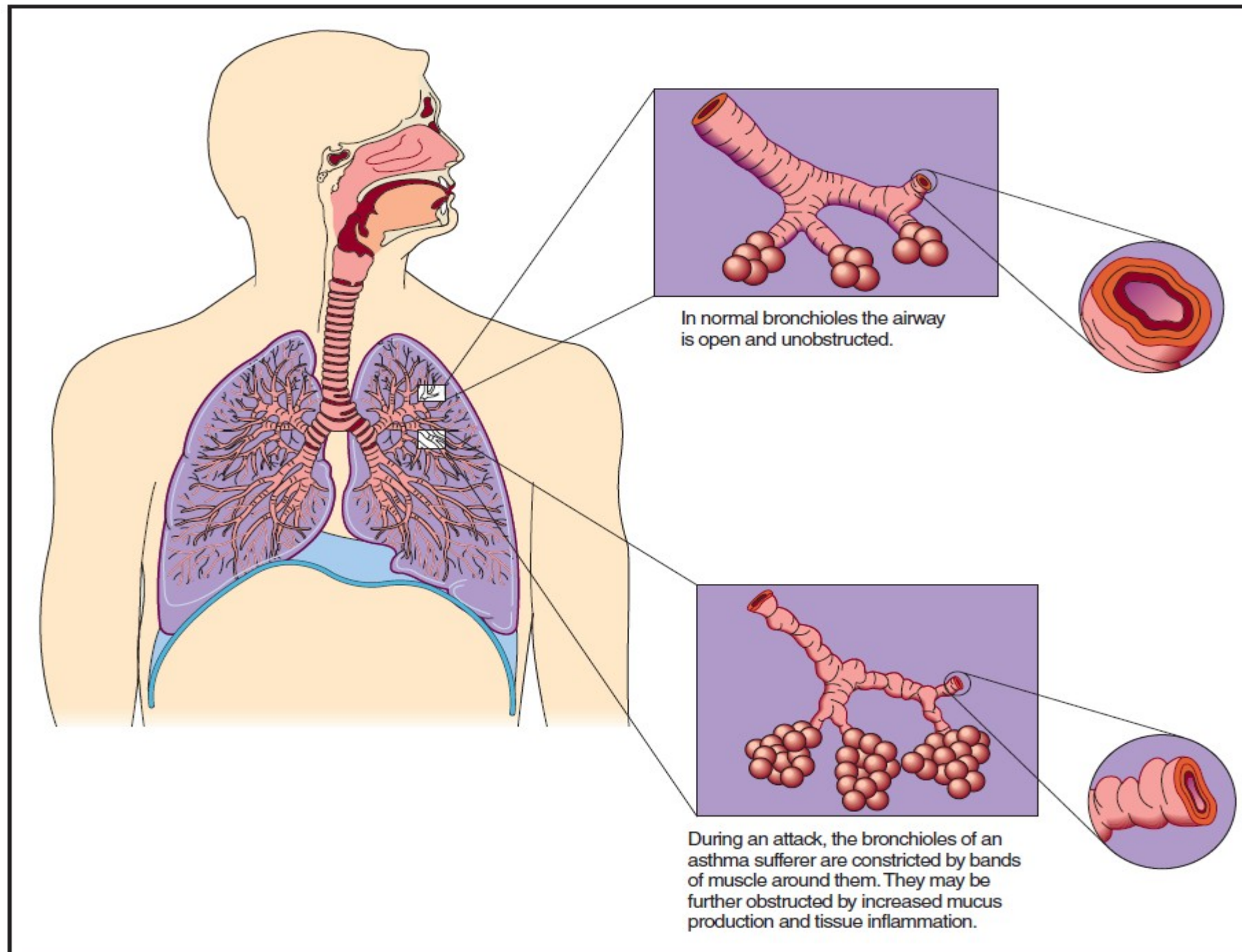
- ✓ Airway hyper responsiveness
- ✓ Mucosal edema
- ✓ Mucus production

■ Patients with asthma may experience symptom-free periods alternating with acute exacerbations, which last from minutes to hours or days.

Asthma cont'd...

▶ Asthma is characterized as:

- ◆ Reversible inflammation and obstruction
- ◆ Intermittent attacks
- ◆ Sudden onset
- ◆ Varies from person to person
- ◆ Severity varies from shortness of breath to death



Asthma cont'd...

Etiology/ predisposing factors

◆ Allergens

◆ Genetic predisposition

- Common allergens

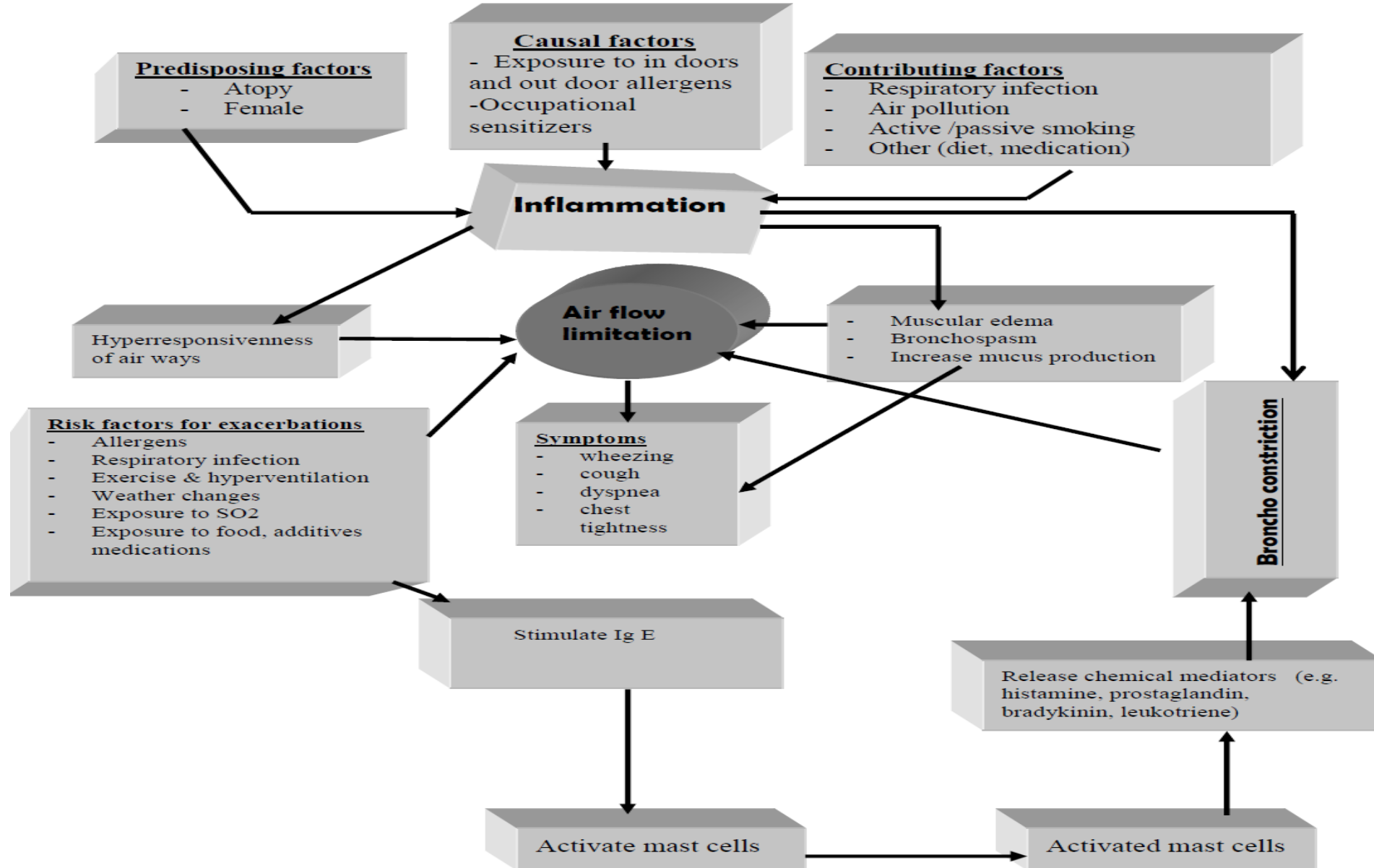
- ✓ Seasonal
- ✓ Perennial

- Common triggers for asthma symptoms and exacerbations:-

- ✓ Extrinsic agents
- ✓ Intrinsic agents

Asthma cont'd...

Pathophysiology



Asthma cont'd...

Clinical manifestation

✚ The most common three symptoms are:-

- Cough
- Dyspnea (Chest tightness)
- Wheezing (Prolonged expiratory phase)

✚ If exacerbation progresses:-

- Diaphoresis
- Tachycardia
- Central cyanosis (hypoxemia)

Asthma cont'd...

C/M...

- ✓ Hypoxia
- ✓ Confusion
- ✓ Increased heart rate & blood pressure
- ✓ Respiratory rate up to 40/minute & pursed lip breathing
- ✓ Use of accessory muscles
- ✓ Flaring nostrils

Asthma cont'd...

Diagnosis

- ◆ Hx
- ◆ Physical examination
- ◆ Chest X-ray
- ◆ Sputum increase viscosity
- ◆ CBC- eosinophills
- ◆ Lung Function Tests
- ◆ Arterial blood gas analysis and pulse oximetry

Asthma cont'd...

Medical management

■ ***Non-drug treatment:*** Prevention of exposure to known allergens and inhaled irritants.

■ ***Drug treatment***

▶ Broncho dilators-

▶ β_2 -adrenergic agonists

▶ Methylxanthines

▶ Corticosteroids

▶ Leukotriene modifiers

▶ Anticholinergics

Asthma cont'd...

According to DACA:

Initial treatment

- ✓ Salbutamol (metered dose inhaler MDI).

Alternatives

- ✓ Aminophylline, 5mg/kg by slow I.V. push over 5 minutes. **OR**
- ✓ Adrenaline, 0.5ml sc.

Asthma cont'd...

Maintenance therapy for chronic asthma in adults:

- ❖ Requires prolonged use of anti-inflammatory drugs mainly in the form of steroid inhalers

Intermittent asthma:

- Salbutamol, inhaler 200 microgram/puff, 1-2 puffs to be taken as needed but not more than 3-4 times a day

Alternative

- Ephedrine + Theophylline

Asthma cont'd...

Persistent mild asthma

- ✓ Salbutamol, inhaler, 200 micro gram/puff 1-2 puffs to be taken, as needed but not more than 3-4 times/day **PLUS**
- ✓ Beclomethasone, oral inhalation 1000mcg QD for two weeks

Alternative

- ✓ Ephedrine + Theophylline (11mg + 120mg), P.O. two to three times a day **PLUS**
- ✓ Beclomethasone oral inhalation 1000mcg QD for two weeks.

Asthma cont'd...

Persistent moderate asthma

▶ Salbutamol, inhalation 200microgram/puff 1-2 puffs as needed PRN not more than 3-4 times a day.

PLUS

▶ Beclomethasone, 2000mcg, oral inhalation QD for two weeks and reduce to 1000 mcg if symptoms improve.

Asthma cont'd...

Severe persistent asthma

- ✓ Salbutamol, inhalation , 200 micro gram/puff 1-2 puffs not more than 3-4 times a day
PLUS
- ✓ Beclomethasone, 2000 mcg, oral inhalation daily

Asthma cont'd...

Nursing management

- ✓ Assessing the patients respiratory status
- ✓ Obtaining history of allergic reaction to medication before administering
- ✓ Fluid administration if the patient is dehydrated
- ✓ Antibiotics administration for underlying respiratory infections
- ✓ The purpose and action of each medication
- ✓ Triggers to avoid, and how to do so

Asthma cont'd...

Complications

- + Respiratory failure

- + Pneumonia

- + Atelectasis

- + Status asthmatics

Asthma cont'd...

Status asthmatics

- Severe & persistent asthma that does not respond to conventional therapy can be experienced as a complication.
- Pts aware of increasing chest tightness, wheezing, and dyspnea that are often not or poorly relieved
- The attacks can last longer than 24 hours.

Clinical Manifestations

- The clinical manifestations are the same as those seen in severe asthma:
 - ✓ Labored breathing,
 - ✓ Prolonged exhalation,
 - ✓ Engorged neck veins, and
 - ✓ Wheezing

- As the obstruction worsens, wheezing may disappear, a sign of impending respiratory failure.

Asthma cont'd...

Mgt of status asthmatics

- Pts requires supplemental Oxygen administration and IV fluid administration
 - Oxygen therapy is initiated to treat dyspnea, central cyanosis, and hypoxemia.
- Initially pts treated with high dose of short acting beta-adrenergic agonist & corticosteroids
 - If there is no response to repeated treatments, hospitalization is required.

Asthma cont'd...

Nursing management

- ✓ Constantly monitors the patient for the first 12 to 24 hours.
- ✓ Assesses the patient's skin turgor to identify signs of dehydration.
- ✓ Fluid intake is essential to combat dehydration, to loosen secretions & to facilitate expectoration.
- ✓ Room should be quiet and free of respiratory irritants



***HAVE A
NICE DAY***

