Acute Bronchiolitis

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Acute Bronchiolitis

- Its common disease of **lower respiratory tract**, resulting from inflammatory obstruction of small airways.
- It occur during first 2 years of life, commonly from 2month- 2 years with peak at age of six month. The incidence is higher in spring and winter.

Etiology :-

It is predominantly a viral disease, respiratory syncytial virus **(RSV**) is commonest cause accounting more than 50% of cases. Other viruses includes, parainfluenza, adeno, influenza. Rarely by mycoplasma. Viral bronchiolitis is extremely contagious and is spread by contact with infected respiratory secretions. Although coughing produces aerosols, hand carriage of contaminated secretions is the most frequent mode of transmission.

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Pathophysiology :-

Bronchiolar obstruction is due to edema, accumulation of mucus & cellular debris & by invasion of small bronchial tree by viruses.

Clinical manifestations :-

It starts as mild URTI with serous nasal discharge & sneezing, this may accompanied by fever of 38.5-39C, irritability, & diminished appetite. Then gradual development of respiratory distress characterized by cough, dyspnea, wheeze & irritability. The infant is often tachypneic, which can interfere with feeding. The child does not usually have other systemic complaints such as diarrhea or vomiting.

Apnea may be more prominent than wheezing early in the course of the disease in very young infants (< 2 mo old) or former premature infants.

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Physical signs include prolongation of the expiratory phase of breathing, tachypnea, nasal flaring, intercostal retractions, suprasternal retractions, and air trapping with hyperexpansion of the lungs. During the wheezing phase, percussion of the chest usually reveals only hyperresonance, but auscultation usually reveals diffuse **wheezes and crackles** throughout the breathing cycle. With more severe disease, cyanosis may be present.

Indications for hospitalization include:-

- Moderate to marked respiratory distress.
- hypoxemia
- Apnea
- Inability to tolerate oral feeding.
- Lack of appropriate care available at home
- High risk children with bronchiolitis.

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Risk factors for sever disease include :-

- Age <12 week.
- Preterm birth.
- Underlying comorbidity such as cardiovascular, pulmonary, neurologic, or immunologic disease.

Diagnosis:-

It is mainly clinical

1-Pulse oximetry for monitoring oxygen saturation.

2-CXR show hyperinflation of lungs and patchy atelectasis.

3-WBC &differential counts are normal.

4-Viral testing (polymerase chain reaction, rapid immunofluorescence, or viral culture) is helpful if the diagnosis is uncertain.

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D.Diagnosis :-

1- **bronchial asthma.** It may be difficult to differentiate asthma from bronchiolitis by physical examination, but age of presentation, presence of fever, and absence of personal or family history of asthma are the major

differential factors. Bronchiolitis occurs primarily in the first year of life and is accompanied by fever, whereas asthma usually presents in older children with previous wheezing episodes typically unaccompanied by fever unless a respiratory tract infection is the trigger for the asthma exacerbation.

2- congestive heart failure.

3- **foreign body**(in the trachea or bronchi)

4- pertusis.

5- cystic fibrosis.

6- bacterial bronchopneumonia.

7- obstructive emphysema.

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Treatment :-

- Since its viral infection, treatment is supportive, infant with respiratory distress should be admitted to hospital and should be placed in atmosphere of cold humidified **oxygen.**
- Placing the patient sitting at 30-40 degree angle or head and chest slightly elevated.
- Sedative should be avoided.
- I.V.F is indicated in case of sever tachypnea which interfere with feeding .
- Frequent suctioning of nasal and oral secretions often provides relief of distress.

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- **Ribavirin is anti viral agent administered by aerosol, used for infants with congenital heart disease or chronic lung disease with bronchiolitis.**
- **Antibiotics have no therapeutic value unless there is coexisting bacterial infection.**
- **Corticosteroids , whether parenteral, oral, or inhaled, have been used for bronchiolitis despite conflicting and often negative studies.**
- **Bronchodilators may produce short term improvement in clinical features.**
- **Nebulizer of epinephrine may be effective.**
- **Nebulized hypertonic saline has been reported to have some benefit.**

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Prognosis :-

- Infant with acute bronchiolitis are at highest risk for further respiratory compromise in the first 48-72 hr after onset of cough and dyspnea.
- Most cases of bronchiolitis resolve completely, although minor abnormalities of pulmonary function and bronchial hyperreactivity may persist for several years.
- Recurrence is common but tends to be mild and should be assessed and treated similarly to the first episode.
- The case fatality rate is <1%, with death attributable to apnea, respiratory arrest , or sever dehydration.

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Prevention:-

- Reduction in the severity and incidence of acute bronchiolitis because of RSV is possible through the administration of pooled hyper immune RSV intravenous immunoglobulin and palivizumab, an intramuscular **monoclonal antibody** to the RSV F protein.
- Palivizumab should be considered for **infants younger than 2yr** of **age with chronic lung disease**,

history of prematurity, and **congenital heart disease**.

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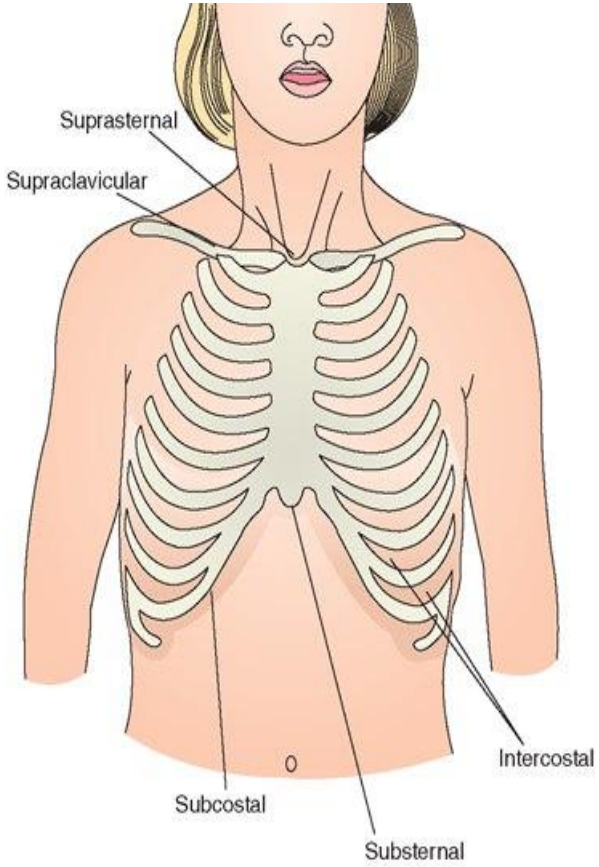

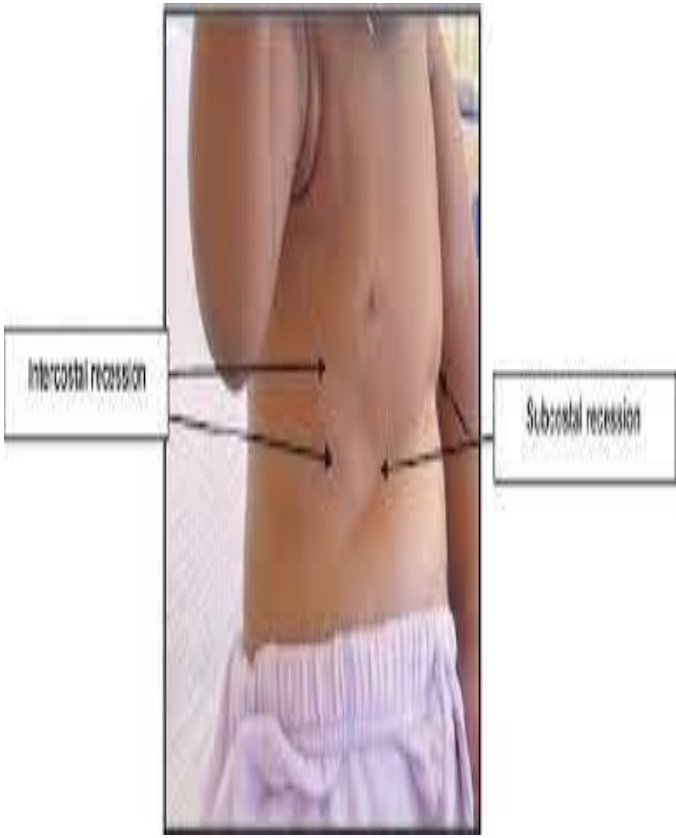

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