

Whooping Cough

Learning Objectives:

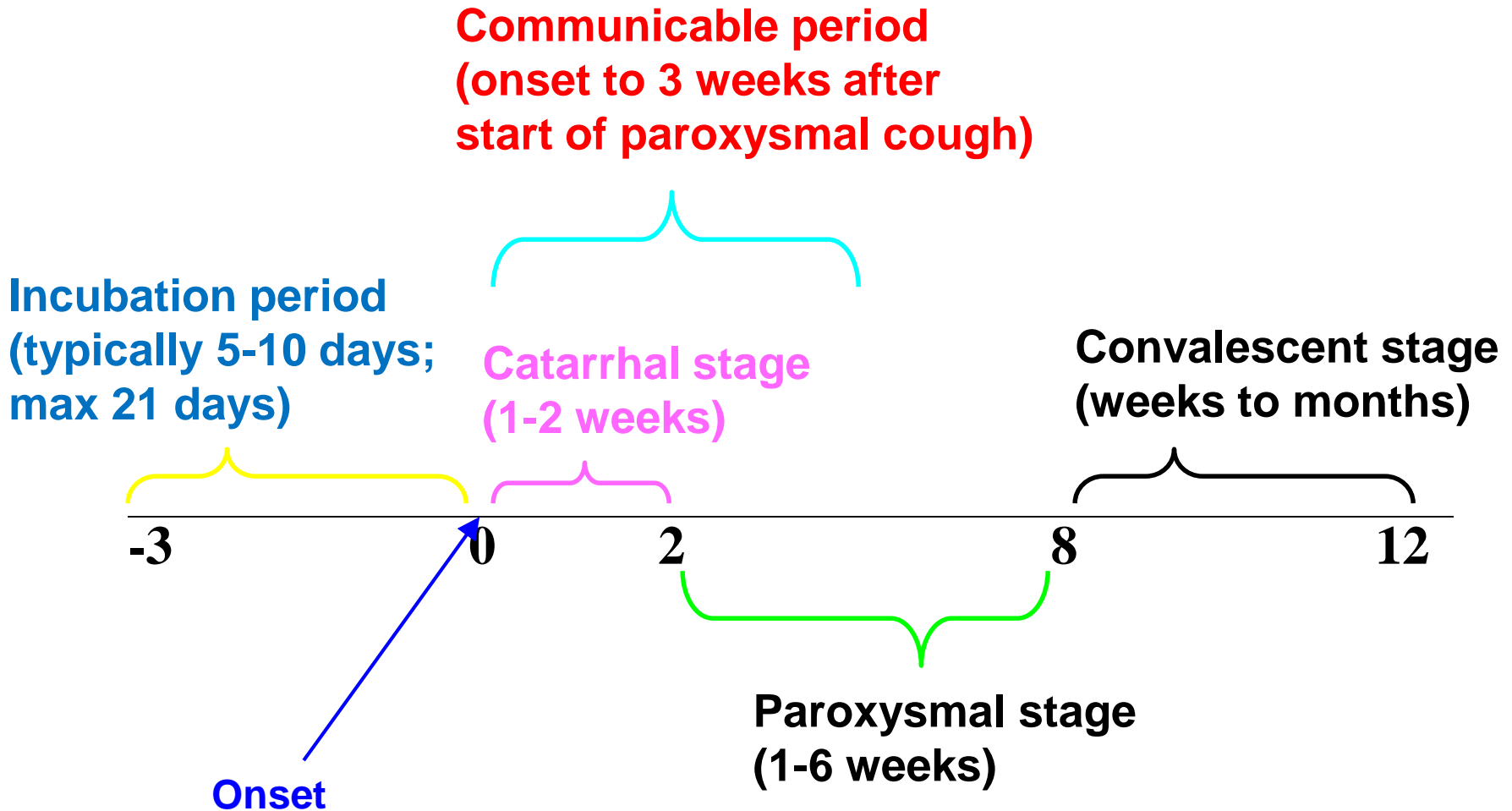
1. Define the Concept,
2. Identify the etiology
3. Describe the clinical presentation of whooping cough
4. Mention the differential diagnosis of whooping cough
5. Identify the complications of whooping cough
6. Clarify the prevention
7. Outline treatment



Pertussis (Whooping Cough)

- ❑ **Highly contagious respiratory disease**
- ❑ **Severe, debilitating cough illness (“100 day cough”) in persons of all ages**
- ❑ **Highest morbidity and mortality among infants**
- ❑ **Estimated worldwide deaths > 300,000/yr**
- ❑ **Vaccine-preventable**
- ❑ **Poorly controlled, despite high vaccine coverage**

Clinical Course (in weeks)



Clinical Stages

❑ Catarrhal

- Watery eyes, low-grade fever, malaise, mild eye inflammation, runny nose, late-phase nonproductive cough

❑ Paroxysmal

- Paroxysms (bursts of coughing during a single exhalation) followed by an inspiratory "whooping" sound, post-tussive cyanosis, & vomiting
- In infants younger than 6 months (especially those younger than 4 wks): apnea, bradycardia, prolonged cough, poor feeding, no paroxysms

❑ Convalescent

- Paroxysms gradually improve but recur with respiratory infections

Infant Pertussis



Source: Shot of Prevention, Brady passed away at just 2 months from pertussis

- ❑ **Young infants at highest risk of disease and complications**
- ❑ **Atypical symptoms:**
 - ❑ Catarrhal stage & cough may be minimal or absent
 - ❑ Apnea (st. with seizures)
 - ❑ Sneezing
 - ❑ Gagging, choking, vomiting
 - ❑ Whoop infrequent
- ❑ **Cough illness among close contacts**
- ❑ **Presumptive treatment should begin immediately**

Pertussis among Adolescents & Adults

- ❑ **Wide spectrum of presentation**
 - Disease often milder than in infants and children
 - May be asymptomatic
 - Can be quite severe and with classic presentation
- ❑ **Clinically difficult to distinguish from other causes of cough illness**
- ❑ **Persons with mild disease can transmit infection**

Pertussis Treatment

□ When to treat

- Adults, adolescents, children
 - Antimicrobials may modify course if given early (↓duration & severity of symptoms & lessen communicability)
 - Treatment >3 wks after cough onset limited benefit
- Infants and pregnant women near term
 - Treatment up to 6 wks after cough onset should be considered

□ Recommended treatment

- Macrolide / azolide antimicrobial
 - 5 day course azithromycin
 - 7 day course clarithromycin
 - 14 day course erythromycin
- Alternative agent:
 - 14 day course trimethoprim-sulfamethoxazole (Bactrim)

Diagnosis:

History &P/E

Leuckocytosis (Lymphocytosis)

Culture(Nasopharengeal swab)

Direct Flurocent Antibody , PCR
(Nasopharengeal)

Perihilar Infiltration'...signs of segmental lung
atelectasis

- **Who has pure or predominant complaint of cough, especially if the following are absent: fever, malaise or myalgia, exanthem or enanthem, sore throat, hoarseness, tachypnea, wheezes, & rales**
- **For sporadic cases, a clinical case definition of cough of ≥ 14 days' duration with at least 1 associated symptom of paroxysms, whoop, or post-tussive vomiting has a sensitivity of 81% & specificity of 58% for culture confirmation.**

- **Pertussis should be suspected in older children whose cough illness is escalating at 7–10 days & whose coughing episodes are not continuous.**
- **Pertussis should be suspected in infants <3 mo of age with apnea, cyanosis, or an acute life-threatening event (ALTE). *B. pertussis* is an occasional cause of sudden infant death.**

Differential Diagnosis:

- Pneumonia
- Asthma
- RSV, parainfluenza virus, and *C. pneumoniae*
- TB
- CF
- Foreign body
- Bronchiolitis
- Mediastinal Lymphadenopathy

COMPLICATIONS

- Most common among infants & young children: hypoxia, apnea, pneumonia, seizures, encephalopathy, & malnutrition
- The most frequent complication is pneumonia
- Atelectasis may develop 2ndary to mucous plugs.
- The force of the paroxysm may rupture alveoli & produce pneumomediastinum pneumothorax, or interstitial or S.C emphysema
- epistaxis; hernias;
- Retinal subconjunctival hemorrhages

Treatment

- Erythromycin 50 mg/kg/D PO (14 DAY)
- Azithromycin , clarithromycin ,TMP-SMZ
- Salbutamol
- Moist O₂
- Nasopharyngeal suction
- IV Fluid
- No Immunoglobulin'No Antitussive drugs'No Steroid

PREVENTION

- Pertussis vaccine has an efficacy of 70% - 90%
- Erythromycin & other macrolides are effective in preventing disease in contacts exposed to pertussis
- Close contacts <7 yrs should receive a booster dose of DTaP also should be given a macrolide AB.
- Close contacts >7 yr should receive prophylactic macrolide antibiotic for 10 - 14 days, but not the vaccine???

Bilateral scleral hemorrhages & periorbital edema in a young boy with pertussis.





Ecchymoses & conjunctival hemorrhage in a 6-year-old unimmunized child with pertussis

