Whooping Cough

Microorganisms

- Two species of the genus ***Bordetella***: *B. pertussis (90%) and B. parapertussis (10%)*
- A **toxico-infection:** symptoms are primarily mediated ty **pertussis toxin**

Transmission

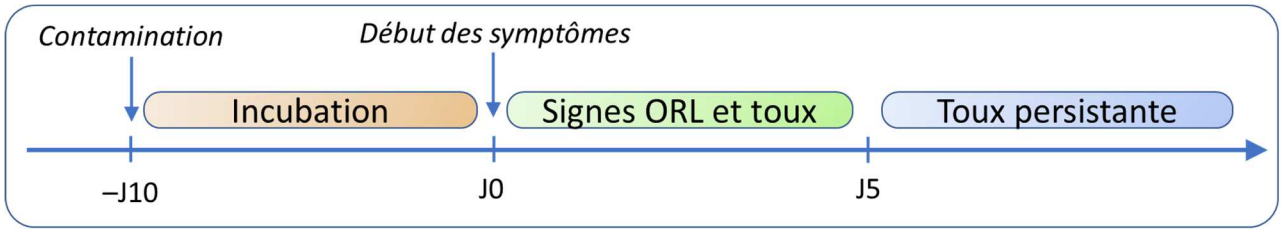
- Transmission occurs exclusively via **person-to-person spread through respiratory droplets**.

Infectivity

- Whooping cough is **a highly contagious disease**; before widespread vaccination, a single infected individual could transmit the infection to 12–15 susceptible individuals.
- The period of infectivity varies depending on antibiotic use:
  - In the absence of antibiotic therapy, patients remain contagious for up to three weeks following symptom onset, with peak transmissibility during the first week.
  - With appropriate antibiotic treatment, the duration of contagiousness is significantly reduced, typically to 3–5 days, depending on the specific antimicrobial agent administered.

Clinical presentation

- **Incubation:** 10 days on average (range: 7–21 days)
- **Catarrhal phase:** Lasts approximately 5 days; characterized by rhinitis and a mild, usually afebrile cough
- **Paroxysmal (state) phase:** Marked by a cough
  - Infant and young children. The cough is often classic in presentation—spasmodic, predominantly nocturnal, emesis-inducing, and potentially asphyxiating, with a characteristic inspiratory "whoop"
    →Severe cases are common in infants under 6 months of age and require hospitalization
  - Adult. Cough tends to be non-specific; a persistent cough lasting more than 7 days should raise suspicion



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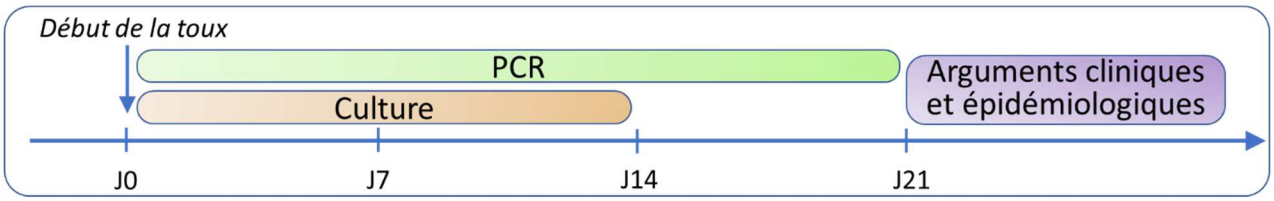
Diagnosis

Diagnostic strategy based on time since cough onset:

- Cough < 15 days: Perform PCR and/or culture on a respiratory specimen
- Cough between 15 and 21 days: Perform PCR on a respiratory specimen
- Cough > 21 days: Diagnosis is based on clinical presentation and epidemiological context (e.g., confirmed cases in close contacts)



Treatment

- The primary objective of antibiotic therapy is to reduce disease transmissibility. Antibiotics have minimal impact on symptoms, which are primarily toxin-mediated.
- First-line treatment: **Macrolide** antibiotics.
  - Infants < 3 months

Drug	Dosage	Duration
Clarithromycin*	15 mg/kg/day, administered in two divided doses	7 days
Azithromycin	20 mg/kg/day, administered as a single daily dose	3 days

  - Children from 3 months to 6 years

Drug	Dosage	Duration
Clarithromycin	15 mg/kg/day, divided into two doses per day, not to exceed the adult maximum dose of 500 mg twice daily	7 days
Azithromycin	20 mg/kg/day, administered as a single daily dose, not to exceed the adult maximum of 500 mg once daily	3 days

  - Adults

Drug	Dosage	Duration
Clarithromycin	500 mg twice daily	7 days
Azithromycin	500 mg once a day	3 days

- In case of allergy to macrolides, cotrimoxazole

Drug	Dosage	Duration
Infants < 3 months	Contraindicated	
Infants from 3 months to 6 years	6 mg/kg/day of trimethoprim, divided into two daily doses, not to exceed the adult dosage	7 days
Adults	1 tablet (800 mg sulfamethoxazole / 160 mg trimethoprim) twice daily	7 days

* Clarithromycin has a lower ecological impact compared to azithromycin

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Prevention

Vaccine

- The acellular pertussis vaccine is systematically combined with other valences (DTP)
- General recommendations:

	First vaccination			Reminders		
Age	2 months	4 months	11 months	6 years old	11-13 years old	25 years old

- Special recommendations*:
  - Pregnant women: Vaccination is recommended during each pregnancy, ideally between 20 and 36 weeks of gestation
  - Professionals in contact with infants under 6 months: A booster is recommended if the last dose was administered > 5 years ago
  - Close contacts of infants < 6 months: Vaccination is advised if the last booster was > 5 years ago and the mother was not vaccinated during pregnancy.
  - Healthcare professionals: Booster doses are recommended at ages 25, 45, and 65.

  * The recommendations have been adapted to the epidemic context
- Vaccination is not required for individuals who have had a documented case of whooping cough within the past 10 years.

Isolation

- Isolation of affected individuals: Sick individuals should be isolated for the entire duration of contagiousness.
- School exclusion: Children of school age should be excluded from school during the contagious period

Antibiotic prophylaxis

- Prophylactic antibiotics are indicated for:
  - Infants < 6 months, regardless of vaccination status
  - Infants aged 7–11 months who are unvaccinated or incompletely vaccinated (i.e., < 2 doses of vaccine)
  - Vulnerable populations: * Individuals > 80 years of age; *Immunocompromised individuals; * Those with chronic respiratory conditions (e.g., asthma, COPD); * Individuals with obesity; * Pregnant women in the 3rd trimester, if their last vaccination was > 5 years ago
  - Individuals in close contact with infants or vulnerable individuals, if their last vaccination against whooping cough was > 5 years ago
- Timing of antibiotic prophylaxis: Prophylaxis is recommended if the last contact with an infected individual occurred:
  - < 21 days for infants under 11 months of age who are unvaccinated or incompletely vaccinated (< 2 doses of vaccine)
  - < 14 days for all other cases
- Medication and duration
  - The antibiotics and treatment duration are identical to those used for curative therapy

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