

HAEMOPHILUS INFLUENZAE TYPE B INVASIVE DISEASE (HIB)

Case definition

CONFIRMED CASE

Clinical evidence of invasive disease with laboratory confirmation of infection:

- Isolation of *H. influenzae* (serotype b) [Hib] from a normally sterile site

OR

- Isolation of *H. influenzae* (serotype b) from the epiglottis in a person with epiglottitis

PROBABLE CASE

Clinical evidence of invasive disease with laboratory evidence of infection:

- Demonstration of *H. influenzae* type b antigen in cerebrospinal fluid

OR

- Demonstration of *H. influenzae* DNA in a normally sterile site

OR

- Buccal cellulitis or epiglottitis in a child < 5 years of age with no other causative organisms isolated.

Causative agent

The bacteria *Haemophilus influenzae*, serotype B.

Source

Humans

Incubation

Unknown, possibly 2-4 days

Transmission

Person-to-person from direct contact or droplet contact of oral or nasal secretions, e.g. saliva, nasal mucous or respiratory secretions.

Communicability

As long as organisms are present, asymptomatic carriage may occur indefinitely in up to 2-5% of children. Communicability ends within 24-48 hours after the beginning of antibiotic therapy.

Symptoms

Illnesses often caused by *H. influenzae* type B include meningitis, epiglottitis, pneumonia, pericarditis, osteomyelitis, empyema, septic arthritis and bacteremia. Onset of symptoms is usually sudden and includes fever, drowsiness, meningeal irritation (stiff neck or back). Progressive stupor or coma is common. Most cases are in children 3 months to 4 years of age.

Diagnostic testing

Contact your local lab

Treatment

Ampicillin has been the drug of choice, however, with 30% of strains now resistant, ceftriaxone or cefotaxime is recommended concurrently or singly until antibiotic sensitivities are known.

PUBLIC HEALTH MANAGEMENT & RESPONSE

Case management

This is a priority follow-up and must be dealt with immediately.

Contact the primary care provider (PCP):

Investigate contacts and administering prophylaxis:

Definitions of contacts and recommended prophylaxis for Hib are defined under contact tracing. Advise contacts to consult with their physician immediately to obtain prophylaxis.

Educate contacts:

Advise contacts to watch for signs and symptoms of illness, as outlined on fact sheet.

Following up contacts:

Follow up all contacts to confirm that they have received appropriate prophylaxis and that they have not become cases (within 2 weeks).

When the case attends a child care setting:

One case of Hib:

- Notify all parents of the occurrence of one case [see reference letter].
- Educate parents and staff to watch for signs and symptoms in children and staff [see General Information Sheet], and to seek prompt medical attention for any ill children.
- Require the director of the child care setting to notify Public Health (PH) if additional children become ill.

Two cases of Hib occur within 60 days:

- Notify all parents of the occurrence of cases [see appendices].
- If unimmunized or incompletely immunized children attend the child care setting, recommend prophylaxis for all attendees and staff.
- Recommend that unimmunized or incompletely immunized children receive a dose of vaccine and be scheduled for completion of the vaccine series.
- Educate parents and staff to watch for signs and symptoms in children and staff [use general information sheet], and to seek prompt medical attention for any ill children.
- Require the director of the child care setting to notify PH if additional children become ill.

Exclusion

Children and staff who have Hib should be excluded from child care settings until they are well enough to return and appropriate prophylaxis measures have been completed.

Education

- Immunize according to the [*Nova Scotia immunization schedule*](#).
- Reduce direct contact and exposure to droplets.
- Good hand washing technique using soap and warm running water.
- Careful observation of exposed household contacts and child care settings contacts. Exposed individuals who develop a febrile illness should receive prompt medical evaluation.

Contact tracing

Definition of close contact/exposure criteria

The following definitions apply to the prophylaxis guidelines listed below:

Household contact: an individual residing with the infected person or a non-resident who spent four or more hours with the index case for at least 5 of the 7 days preceding the day of hospital admission of the index case (not school contacts). This includes people who share sleeping arrangements, such as military personnel in a barracks setting.

Child care Setting contact: a child who has attended a child care setting where an infected individual has been identified.

Complete immunization: Immunization is complete when the individual has had at least 1 dose of conjugate vaccine at 15 months of age or older, 2 doses between 12 and 14 months, or a 2- or 3-dose primary series when younger than 12 months with a booster dose at 12 months of age or older.

Prophylaxis

- Chemoprophylaxis is not recommended for occupants of households when all household contacts younger than 48 months of age have completed their Hib immunization.
- In households with at least 1 contact younger than 48 months of age who is unimmunized or incompletely immunized against Hib, rifampin prophylaxis is recommended for all household contacts irrespective of age.
- The exception to the above recommendation is that all members of households with a fully immunized but immunocompromised child, regardless of age, should receive rifampin because of concern that the immunization series may not have been effective.
- Although the risk of secondary disease is low in an infant who has completed the primary 2- or 3-dose series, all members of a household with a child younger than 12 months of age (i.e., who has not yet received the booster vaccine dose) should receive rifampin prophylaxis.

Dosage of rifampin is as follows:

- Rifampin should be given orally once a day for 4 days (in a dose of 20 mg/kg, maximum dose 600 mg/day).
- For adults each dose is 600 mg.
- For infants younger than 1 month of age, give 10mg/kg.

Chemoprophylaxis is not recommended for pregnant women.

Prophylaxis for Child Care Setting Contacts

When two or more cases of invasive disease have occurred within 60 days and unimmunized or incompletely immunized children attend the child care setting, administration of rifampin to all attendees and supervisory staff is indicated.

Prophylaxis for Institutions

Prophylaxis is recommended for individuals younger than 12 months. Provide prophylaxis to those who are 1-3 years of age and inadequately immunized, who share a room with an infected person.

Surveillance forms

novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS_Notifiable_Disease_Surveillance_Case_Report_Form.pdf

novascotia.ca/dhw/populationhealth/surveillanceguidelines/Vaccine_Preventable_Case_Report_Form.pdf

General Information Sheet

Sample Letter

REFERENCES

Control of Communicable Diseases Manual, 17th edition. 2000. James Chin, editor. American Public Health Association.

Infection Control in the Child Care Center and Preschool 3rd edition –1996-Leigh G. Donowitz editor

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