MENINGOCOCCAL INVASIVE DISEASE

EPIDEMIOLOGY & TRANSMISSION

Source:
--Human only
--UpperRespiratory tract secretions
Transmission:
large droplets from upper respiratory tract
Not by droplet nuclei
Not fomites
Attack rate: 0.1%

Carrier 5% population

Long term carriage is protectives

7 days before onset — Communicability

Confined group
Close contact
Oral secretions exchange

Majority: asymptomatic carriers

Acquire new carriage
2-5 days Incubation (max 14)
High risk *800 disease

INVASIVE DISEASE
Meningitis, BSI, Pneumonia

Recovery 80%
Mortality 10%
Disabilities 10%

Fulminant cases (Waterhouse-Friderichsen) purpura, disseminated intravascular coagulation, shock, coma.

Incidence rate 1 to 2 /100,000 /year

DIAGNOSIS / TREATMENT

Clinical Dx
Meningitis, Sepsis, Pneumonia
Petechial or Purpuric rash.

SeroGroups
A, B, C, W125, Y

Laboratory Dx
Gram stain CSF: Gram negative diplococcus
Culture of Blood /CSF: Neiserria meningitidis (Meningococcus)
Meningococci in upper respiratory tract site is not diagnostic (5%carriers)
Bacterial antigen detection in CSF. False-negative common
Positive antigen in serum and urine unreliable
PCR in serum or CSF (expe)
Follow up with Serogroup & PFGE

Send culture to State Lab

Treatment of Meningococcal Invasive Disease
Ceftriaxone, in children 25 mg/kg every 12 hours up to 1 g.
Adult dose, 1 g IV every 12 hours
Penicillin G, 50,000 U/kg every 4 hours IV,
up to 4 million U q 4 hours
Penicillin /cephalosporin allergic, chloramphenicol,
25 mg/kg every 6 hours IV up to 1 g 6 hours
Supportive Care
Common complications of meningococcal disease are vascular collapse and shock, primarily caused by the effects of meningococcal lipooligosaccharide, which is a potent toxin.

PREVENTION / CHEMOPROPHYLAXIS

Droplet Precaution

•Household contacts and persons sharing the same living quarters, ++ young children

• Daycare center or child care contacts, frequent playmates of young children

• HCW who resuscitated, intubated, or suctioned the patient before antibiotics were begun

•Close social contacts who were exposed to oral secretions in week prior to onset, such as by kissing, sharing eating utensils or toothbrushes

•NO casual contacts: classroom (other than child care center), elementary or secondary school class mates, school bus, office co-worker, HCW with casual contact (for example, entering the patient room, taking vital signs)

Infected people not considered contagious after 24 hours of preventive Tx
After discharge from hospital, no risk to classmates, return to school OK
Chemoprophylaxis >14 days after index illness onset not useful
Oropharyngeal or nasopharyngeal cultures not helpful

Chemoprophylaxis
- eliminate nasopharyngeal carriage of close contacts
- reduce their risk of developing invasive disease
- does NOT prevent contacts from subsequently acquiring the infection
- does NOT treat infection in those incubating disease.

Drug	Age group	Dosage	Duration
Rifampin	Children <1mo	5mg/kg q12hr	2 days
Rifampin	Children ≥1 mo	10mg/kg q12hr	2 days
Rifampin	Adults	600mg q12hrs	2 days
Cipro	Adults	500mg	Stat
Ceftriaxone	Children <15 yr	125mg	Stat IM
Ceftriaxone	Adults	250mg	Stat IM

An outbreak is defined by the occurrence of
3 or more confirmed or probable cases of identical serogroup
during a period of ≤ 3 months,
with a primary attack rate ≥10 /100,000 population.

MASS IMMUNIZATION