

STREPTOCOCCUS, GROUP B, DISEASE OF THE NEWBORN

(Group B Streptococcal Disease of the Newborn)

REPORTING INFORMATION

- Class A(3)
- Report by end of work week
- [Confidential Case Report Card](#) (3812.11, rev. 12/81), [lab report](#) (3833.11), or telephone

AGENT

Streptococcus agalactiae (Group B *Streptococcus*)

CASE DEFINITION

CDC has not published a case definition for this entity as of Spring, 1999.

Clinical description

See Signs and Symptoms below.

Laboratory criteria

Isolation of Group B *Streptococcus* from blood, CSF, or other site of infection in an infant less than three months of age. Detection of Group B streptococcal antigen in serum, CSF, or urine in a symptomatic infant provides presumptive evidence of infection.

SIGNS AND SYMPTOMS

Group B streptococcal disease of the newborn occurs in two distinct forms: early-onset disease (described as onset in infants less than 7 days after birth) and late-onset disease (7 days to three months after birth). Early-onset disease represents about 75% of the cases in newborns and presents as sepsis (50%), pneumonia (35%), and meningitis (15%). It is acquired in utero or during delivery, and low-birth weight, premature infants are more susceptible. Over 50% of affected premature infants die; mortality is less (2% - 8%) in full-term infants. Late-onset disease presents as sepsis and meningitis and, less frequently, bone and joint infections. It is acquired through person-to-person contact and occurs in full-term infants. About 25% of affected infants die.

Fifteen to thirty percent of survivors of Group B streptococcal meningitis will have permanent neurologic sequelae.

Five to 40 percent of pregnant women carry Group B streptococci in the genital tract without symptoms; 1% - 2% of their offspring develop symptomatic infections.

Among adult men and nonpregnant women, Group B streptococci can cause sepsis, skin or soft tissue infections, pneumonia, endocarditis, and bone and joint infections, with a case fatality rate of 15% - 32%. Adults with immunosuppression are more susceptible. In postpartum women, Group B streptococci cause an estimated 15-25% of cases of postpartum febrile morbidity, or 50,000 cases annually. These infections are most commonly endometritis and wound infection after cesarean section.

DIAGNOSIS

Early-onset disease can present with lethargy, poor feeding, jaundice, fever, grunting respirations and other signs of respiratory distress, pallor, and hypotension. Respiratory distress is usually present at or within a few hours after birth. Late-onset disease presents as lethargy, poor feeding, irritability, and fever. Diagnosis is made by isolation of the organism from blood, CSF, or site of focal infection. Rapid antigen detection methods allow presumptive diagnosis prior to culture (false positive rate approximately 5%). Diagnosis of colonization by Group B streptococci in pregnant women is made by culturing the organism from the vagina or rectum rather than from the cervix.

EPIDEMIOLOGY

Source

Much evidence points to the lower gastrointestinal tract as the principal reservoir for group B streptococci. The female genital tract is colonized by the intestinal flora.

Occurrence

Early-onset disease occurs in approximately 2 per 1000 live births. The rate is higher in lower-birth-weight babies. Late-onset disease occurs in approximately 0.5-1.0 per 1000 live births. Black race, maternal age <20 years, history of previous miscarriage, and preterm delivery are risk factors.

Mode of Transmission

Mucous membrane colonization of the newborn results from transmission of the organism from the mother, either in utero or at the time of delivery. Nosocomial transmission has occurred in the hospital nursery.

PUBLIC HEALTH MANAGEMENT**Case**Treatment

Ampicillin plus aminoglycoside are used to treat infants pending culture results, after which penicillin G is used. Clindamycin or erythromycin is the alternative drug for penicillin-allergic patients. Additional therapy is required when there is endocarditis.

Prevention and Control

Carriage of Group B streptococci in pregnant woman can be detected by vaginal and rectal swabs taken near the time of delivery; one protocol for prevention suggests culturing all pregnant woman at 37 weeks gestation. If Group B streptococci are detected in a pregnant woman, intravenous antibiotics (generally penicillin) during labor, beginning at least 4 hours prior to delivery, can decrease the risk of infection in the newborn if the mother develops a fever during labor, has ruptured membranes 18 hours or more before delivery, and has premature labor or rupture of membranes before 37 weeks gestation.

Intravenous antibiotics are also recommended for women who previously have had a baby with Group B streptococcal disease, who have a urinary tract infection caused by Group B streptococci, or who have any of the above named conditions with no result for a Group B streptococci culture (either the culture was not done or results are not available). Treatment with antibiotics prior to labor has not been shown to be beneficial, nor has prophylactic treatment of asymptomatic newborns. Results from rapid antigen tests of the mother taken at her presentation in labor are neither timely nor sensitive enough to identify carriers reliably.

Vaccines to prevent Group B streptococcal disease are being developed.