MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

SECTION I - INFECTIOUS AGENT

NAME: *Streptococcus agalactiae*

SYNONYM OR CROSS REFERENCE: Group B streptococci

CHARACTERISTICS: Gram-positive cocci, ~2.0 μm occurring in pairs and short chains, facultatively anaerobic, beta hemolysis on blood agar

SECTION II - HEALTH HAZARD

PATHOGENICITY: Associated with diseases of the newborn; 90% of cases have septicemia, 40% have pulmonary involvement, and 30% have meningeal involvement; early onset disease acquired in utero or during passage through the birth canal and can have a case fatality rate of 50%; late onset disease with onset from 1 week to 3 months after birth have a case fatality rate of 20% and are probably acquired from the environment; survivors of meningitis cases can be left with hearing loss, blindness, cerebral palsy, mental retardation and/or epilepsy; adult infections include pneumonia, urinary tract infection, endocarditis, meningitis, endocarditis, osteomyelitis and rarely pharyngitis

EPIDEMIOLOGY: Worldwide; mainly causes diseases in infants <3 months of age with low birth weight and in the elderly; predispositions include diabetes mellitus, cancer, HIV

HOST RANGE: Humans, cattle (mastitis), other animals

INFECTIOUS DOSE: Not known

MODE OF TRANSMISSION: The manner of acquisition varies by age; 10-30% of pregnant women harbor Group B streptococci in the genital tract; approximately 1% of their offspring develop symptomatic infection within 6 days of birth; source of infection in older infants, children and adults are not well established

INCUBATION PERIOD: One to seven days for early onset disease, seven days to months for late onset disease

COMMUNICABILITY: Humans carry organisms in throat and vagina; attempts to eradicate genital tract group B streptococci in women during pregnancy with oral antibiotics only partially successful due to reinfecition from rectal carriage of the organism or by reacquisition from culture-positive sexual partners

SECTION III - DISSEMINATION

RESERVOIR: Humans, cattle, horses, dogs, rabbits, guinea pigs, mice

ZOOONOSIS: Possibly through direct or indirect contact with infected animals (mostly livestock workers); strains causing disease in humans are usually biochemically, metabolically or serologically different than those causing disease in animals; if animal transmission to humans does occur it is rare and
of little significance

VECTORS: None

SECTION IV - VIABILITY

DRUG SUSCEPTIBILITY: Sensitive to penicillin or ampicillin; some strains penicillin tolerant and require treatment with an aminoglycoside as well

SUSCEPTIBILITY TO DISINFECTANTS: Susceptible to many disinfectants - 1% sodium hypochlorite and 70% ethanol, formaldehyde, glutaraldehyde, iodines

PHYSICAL INACTIVATION: Sensitive to moist heat (121° C for at least 15 min) and dry heat (160-170° C for at least 1 hour)

SURVIVAL OUTSIDE HOST: Dust - 20 to 30 days; contaminated cows feces - 21-63 days; litter - 20-30 days; paper contaminated with infected milk 4 days; urine 2-6 days; wood - 11 days

SECTION V - MEDICAL

SURVEILLANCE: Monitor for symptoms; confirm bacteriologically

FIRST AID/TREATMENT: Antibiotic therapy

IMMUNIZATION: None available

PROPHYLAXIS: Administration of penicillin or ampicillin at the onset and throughout labor to women who are colonized with group B and who are at high risk of delivering an infected infant (premature)

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: 78 recorded cases of Streptococcus spp. up to 1976

SOURCES/SPECIMENS: Blood, genital specimens, feces, urine, throat swabs and respiratory specimens

PRIMARY HAZARDS: Accidental parenteral inoculation; ingestion: inhalation of infectious aerosols, direct contact

SPECIAL HAZARDS: None

SECTION VII - RECOMMENDED PRECAUTIONS

CONTAINMENT REQUIREMENTS: Biosafety level 2 practices, containment equipment and facilities for all activities involving known or potentially infected clinical materials or culture; animal biosafety level 2 facilities for studies utilizing infected animals

PROTECTIVE CLOTHING: Laboratory coat; gloves when contact with infectious materials in unavoidable

OTHER PRECAUTIONS: None

SECTION VIII - HANDLING INFORMATION

SPILLS: Allow aerosols to settle; wearing protective clothing, gently cover spill with absorbent paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the centre; allow sufficient contact time (30 min)
before clean up

DISPOSAL: Decontaminate before disposal; steam sterilization, chemical disinfection, incineration

STORAGE: In sealed containers that are appropriately labelled

SECTION IX - MISCELLANEOUS INFORMATION

Date prepared: April, 2001

Prepared by: Office of Laboratory Security, PHAC

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Last Updated: 2001-05-14

Important Notices