

OTHER INVASIVE STREPTOCOCCAL DISEASE (ISO)

NOT Group A or B Strep, NOT Streptococcal pneumoniae

✓ DISEASE AND EPIDEMIOLOGY

Clinical Description:

Generally, Group A, Group B, and Strep pneumo (ABP) are the most pathogenic members of the Streptococcal species, however, there is evidence that other streptococcal species are capable of causing invasive illness resembling the spectrum caused by ABP.

Strep bovis: These are normal human flora, but can cause bacteremia, endocarditis, and rarely meningitis, neonatal sepsis, and osteomyelitis. People with Strep bovis often have an underlying cancer of the colon.

Strep viridans (including mutans, salivarius, sanguis, and mitis): These are bacteria of relatively low virulence (normal flora) and can cause endocarditis, bacteremia, and rarely meningitis and pneumonia mainly in people with underlying health problems.

Group C and G strep: Can cause bacteremia, endocarditis, neonatal sepsis, meningitis, osteomyelitis, and pneumonia. Some organisms possess pathogenic factors and are capable of infecting healthy individuals.

Group C strep: These are typically zoonotic illnesses and can be found as pathogens in domestic animals such as horses, cows, birds, rabbits, and guinea pigs. Laboratories may misidentify them as Group A strep. They can be found as part of normal human flora. Many people with Group C strep invasive disease have underlying health problems, but more recent studies have implicated this disease as an emerging human pathogen.

Group G strep: These are normal human flora, and individuals with this disease have underlying health problems, especially cancer.

Strep anginosus: These are normal human oral flora, however they can possess some pathogenic factors. They can cause bacteremia, endocarditis, meningitis, and internal abscesses such as abdominal or thoracic.

Causative Agent:

Streptococcal organisms are differentiated into those causing complete hemolysis on blood agar (beta hemolytic), partial hemolysis on blood agar (alpha hemolytic), and no hemolysis on blood agar (gamma hemolytic).

Beta Hemolytic: Beta hemolytic streps are usually classified into groups, such as A, B, C, etc. See specific disease plans for Groups A and B.

Alpha Hemolytic: The major alpha hemolytic pathogen is *Streptococcus pneumoniae*. See the specific disease plan for Strep pneumo.

Gamma Hemolytic: Enterococcal species (*E. faecalis* and *E. faecium*) are no longer considered part of the *Streptococcus* genus and are not reportable.

Pathogens to report as Invasive Strep Other (ISO):

- Group C strep (*Strep dysgalactiae*, subspecies *equisimilis* or *dysgalactiae*, *Strep equi*)
- Group G strep

- **Strep anginosus**
- **Strep bovis (sometimes called Group D strep)**
- **Strep mutans (sometimes called Strep viridans)**
- **Strep salivarius (sometimes called Strep viridans)**
- **Strep mitis (sometimes called Strep viridans)**
- **Strep sanguis (sometimes called Strep viridans)**

Differential Diagnosis:

The differential diagnosis for these diseases is primarily to rule out other more pathogenic bacteria, such as ABP.

Laboratory identification:

These organisms are all identified via culture and typing found at larger commercial laboratories. Some labs will not speciate these organisms, and merely rule out the presence of ABP and then call these Strep species (or Strep sps.).

UPHL: UPHL does not offer additional diagnostic services for these organisms.

Treatment:

Varies with causative organism, can include penicillin, tetracycline, cephalosporins, vancomycin, clindamycin, sometimes for lengthy periods (e.g. for endocarditis).

Case fatality:

Generally, the ability of these organisms to cause fatality in the host depends upon the underlying causes of illness.

Reservoir:

These organisms are found as normal flora in humans, except for Group C strep which is zoonotic and found in domestic animals.

Transmission:

Most of these organisms are endogenous and transmission is not a problem. For the zoonotic illnesses, transmission can occur through body substances and the respiratory tract (large droplet).

Susceptibility:

The typical patient has underlying co-morbidities.

Incubation period:

Not well defined, as these organisms are normal flora.

Period of communicability:

Not a concern.

Epidemiology:

The majority of these organisms do not cause illness in healthy individuals. There is increasing concern about Groups C and G strep and their ability to cause invasive disease in otherwise healthy individuals.

✓ PUBLIC HEALTH CONTROL MEASURES

Public health responsibility:

- Fill out morbidity form for ISO,
- Investigate all cases of Group C and Group G strep and use GAS investigation form,
- Describe the burden of disease in the community,
- Identify clusters or outbreaks of this disease,
- Identify sources of exposure and stop further transmission.

Prevention:

For the zoonotic illnesses, good hygienic practices, such as handwashing, are an important part of prevention.

Chemoprophylaxis:

None.

Vaccine:

None.

Isolation and quarantine requirements:

Isolation: None

Hospital: Body substance precautions

Quarantine: None

✓ CASE INVESTIGATION

Reporting:

All cases of streptococcal infections in normally sterile body sites are reportable. Isolates due to contamination by skin/normal flora are not reportable.

Case definition:

This is not a nationally notifiable condition.

Case Investigation Process:

- Fill out a morbidity form
- Fill out the **GAS** investigation form only if the causative agent is Group C or Group G.

Outbreaks:

An outbreak will be defined as: two cases of Group C or G strep in individuals without underlying comorbidities in a 30 day period.

Identification of case contacts:

None.

Case contact management:

None.

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Johns Hopkins Point of Care Information Technology

Salt Lake Valley Health Department Disease Investigation Plan