Taylorella equigenitalis

By

Assist. Prf. Dr. Ali Aldeewan

This organism, *Taylorella equigenitalis*, was formerly known as Haemophilus equigenitalis. It is a short (0.7 x 0.7 to 1.8 pm), non-motile, Gram-negative rod, which gives positive reactions in catalase, oxidase and phosphatase tests. It is microaerophilic, slow-growing and highly fastidious, requiring chocolate agar and 5 to 10% CO2 for optimal growth. Although the bacterium is not dependent on the X or V growth factors, availability of factor X stimulates growth. It does not grow on MacConkey agar.

Key points

Short, non-motile Gram-negative rods

Fastidious, optimal growth on chocolate agar

Microaerophilic, 5-10% CO_2 required

Positive oxidase, catalase and phosphatase tests

Causes contagious equine metritis

Usual habitat

The organism is found in the genital tracts of stallions, mares and foals. In stallions, *T. equigenitalis* is harbored in the urethral fossa and the pathogen localizes in the clitoral fossa of infected mares.

Clinical infections

***Taylorella equigenitalis*, the cause of contagious equine metritis, appears to infect only Equidae (Platt and Taylor,1982).**

Contagious equine metritis

Contagious equine metritis (CEM) was first reported as a clinical entity in 1977 in Britain and Ireland . Outbreaks of the disease were subsequently described in other European countries and in the USA, Australia and Japan.

It is a highly contagious, localized venereal disease characterized by mucopurulent vulval discharge and temporary infertility in mares.

Infected stallions and mares are the main reservoirs of infection.

Transmission of the bacterium usually occurs during coitus although infection may also be introduced by contaminated instruments.

It is considered that spontaneous ascending infection in mares is unlikely and that *T. equigenitalis* must be deposited in the uterus for infection to establish . Foals born to infected dams may acquire infection in utero or during parturition. *Taylorella equigenitalis* has been isolated from more than 75% of the offspring of infected mares at 2 to 4 years of age. These offspring and mares which have recovered clinically may act as sources of infection.

Pathogenesis

Pre-ejaculatory fluid and semen may be contaminated with *T. equigenitalis* from the urethral fossa. There is strong clinical and epidemiological evidence that strains differ in pathogenicity. After introduction into the uterus, pathogenic organisms replicate and induce an acute endometritis. Initially, mononuclear cell and plasma-cell infiltration predominates, a feature rarely observed in acute bacterial endometritis. Later, migration of neutrophils into the uterine lumen produces a profuse mucopurulent exudate. Although the pathogen may persist in the uterus, acute endometrial changes subside within a few days.

Clinical signs

Infected stallions and a minority of infected mares remain asymptomatic. Most affected mares develop a copious mucopurulent vulval discharge without systemic disturbance within a few days of service by a carrier stallion. The discharge may continue for up to 2 weeks and affected mares remain infertile for several weeks. Some mares recover without treatment and up to 25% remain carriers. Infection does not confer protective immunity and reinfection can occur.

Diagnostic procedures

1- A copious, mucopurulent vulval discharge 2 to 7 days after service may indicate the presence of CEM.

2- Specimens for bacteriology should be collected before and during the breeding season.

3- Swabs from mares should be taken from the clitoral fossa and sinuses and from the endometrium at oestrus using a double-guarded swab. When taking swabs, disposable gloves should be changed between each animal.

3- Foals of infected mares should be sampled before 3 months of age. Swabs should be taken from the clitoral fossa of fillies and from the penile sheath and tip of the penis in colts. Swabs from stallions and teaser stallions are taken from the urethra, urethral fossa and penile sheath in addition to pre-ejaculatory fluid.

4- Swabs must be placed in Amies charcoal transport medium and reach the laboratory within 24 hours of collection. Samples should be submitted to laboratories which are officially certified by a regulatory authority.

5- Chocolate agar-based media are suitable for isolation with the addition of amphotericin B, crystal violet and streptomycin. Plates with and without streptomycin should be inoculated as some isolates of *T. equigenitalis* are susceptible to this antibiotic. A medium incorporating trimethoprim and clindamycin has been developed. Inoculated plates are incubated under 5 to 10% C02 at 37°C for 4 to 7 days.

Identification criteria for isolates:

1-Colonies, which may be visible after 48 hours, are small, smooth, yellowish-grey and have an entire edge.

2-Reactions in the catalase, oxidase and phosphatase tests are positive.

3-A slide agglutination test, using high-titred *T. equigenitalis* antiserum, can be carried out on the culture.

4-A fluorescent antibody technique, rendered specific by absorption with Mannheimia haemolytica, may be used.

5-A latex agglutination kit is available commercially to identify the pathogen.

6- A polymerase chain reaction technique has been developed for detecting *T. equigenitalis* in specimens

7-Serological tests including the agglutination, complement fixation and ELISA tests are useful for confirming active or recent infections but do not detect asymptomatic carriers.

Treatment

Asymptomatic carriers must be treated as well as clinically affected animals. Elimination of *T. equigenitalis* from both mares and stallions can usually be accomplished by washing the external genitalia with a 2% solution of chlorhexidine combined with local application of antimicrobial drugs such as nitrofurazone ointment on a daily basis. In addition, a daily intrauterine irrigation with penicillin solution is carried out in mares

Control

1- Contagious equine metritis is a notifiable disease in many countries with an advanced thoroughbred industry.

2- Control regimens are based on laboratory detection of asymptomatic and clinical infections with *T. equigenitalis* in animals used for breeding.

3- Appropriate, routine hygienic methods must be practiced on stud farms to prevent lateral spread of the pathogen.

4- If CEM is diagnosed on stud farms, all breeding services should immediately cease.

5- Animals which have been treated for CEM should be sampled to ensure bacteriological freedom from the pathogen.

6- Test-mating a stallion to 2 maiden mares is a sensitive method for detecting infection. Samples from the mares are then examined bacteriologically.

7- No vaccine is available for CEM.