

contagious bovine pleuropneumonia

Etiology

✗ The causal organism is *Mycoplasma mycoides mycoides*

✗ Epidemiology

1. Susceptible cattle become **infected by inhaling droplets** disseminated by coughing in affected cattle.
2. Septicemia produces lesions in **the kidneys and very occasionally in the placenta**, which can be sources of infection.
3. **Transplacental infection of the fetus can occur.**
4. **Of recovered animals, 25% may become carriers with chronic lung lesions in the form of sequestra of variable size.**

Methods of Transmission

Transmission occurs from **direct and repeated contacts between sick and healthy animals.**

- Infected hay remained infective for up to 144 hours.

-Other inanimate objects such as **placenta and urine can also remain infective for long periods.**

-It has been suggested that urine may be a mode of transmission,

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-M. mycoides subsp. mycoides is sensitive to all environmental influences, including **disinfectants, heat, and drying, and does not ordinarily survive outside the animal body for more than a few hours.**

Pathogenesis

The disease is an **acute lobar pneumonia and pleurisy.**

-The organism invades the lungs of cattle and causes a mycoplasmaemia;

- this results in localization in numerous other sites including the **kidneys, joints and brain,** resulting in high morbidity and mortality.

An essential part of the pathogenesis of the disease is **thrombosis in the pulmonary vessels,**

Clinical findings

-There is considerable variation in the severity of clinical disease from **hyperacute to acute to chronic and subacute forms.**

-With acute the incidence 90% and fatality rates of 50% and 25% of the infected cattle have been estimated to remain as **recovered carriers** with or without clinical signs.

Acute Form

- After an incubation period of 3 to 6 weeks (up to 6 months), there is a sudden onset of high fever (40° C [105° F]),

-**a drop in milk yield, anorexia, and cessation of rumination.**

-There is severe depression, and the animals stand apart group.

-**Coughing, at first only on exercise,**

-and thoracic pain are evident;

- **affected animals are disinclined to move, standing with the elbows out, the back arched, and the head extended.**

- Respirations are shallow, rapid, and accompanied by expiratory grunting.

- Pain is evidenced on percussion of the chest.

- Auscultation reveals pleuritic friction sounds in the early stages of acute inflammation, and dullness, fluid sounds,

× Dullness of areas of the lung may be detectable on percussion.

× Edematous swellings of the throat and dewlap may occur.

In calves,

- **endocarditis and myocarditis may occur.**

- In fatal cases death occurs from several days to 3 weeks.

In the peracute form:

× affected cattle may die within 1 week after the onset of respiratory distress.

Chronic and Subacute Forms Recovered animals may be clinically normal

× but in some an inactive **sequestrum forms** in the lung, with a necrotic center of sufficient size to produce a toxemia causing unthriftiness,

× a chronic cough, and mild respiratory distress on exercise.

× These sequestra may break down when the animal is **exposed to environmental stress and may cause an acute attack of the disease.**

and then act as a source of infection for **susceptible in-contact animals**

- and unapparent **carriers are a major source of infection.**

× **Lesions**

1. The thoracic cavity may contain up to 10 L of clear yellow or turbid fluid mixed with fibrin flakes,

2. the organs in the thorax are **often covered by thick deposits of fibrin.**

3. **the typical marbled appearance of pleuro-pneumonia** is evident due to the widened interlobular septa and subpleural tissue that encloses gray, yellow, or red consolidated lung lobules.

-In chronic cases,

the lesion has a necrotic center sequestered in a thick, fibrous capsule, and there may be fibrous pleural adhesions.

Organisms may survive only within the inner capsule of these sequestra, and the animals may become carriers.

Differential diagnosis

In the acute form

1-Pleuropneumonia and bronchopneumonia from mixed infections

2-East Coast Fever

3-Traumatic pericarditis

In the chronic form

1-Hydatid cyst,

2-Actinobacillosis and

3- tuberculosis,

4-bovine farcy

× Diagnosis

1. Diagnosis is based on clinical signs,
2. serological test .
3. Confirmation is by isolation of the mycoplasma

× Treatment

- × is recommended only in endemic areas because the organisms may not be eliminated, and carriers may develop.

× RX

1. Tylosin (10 mg/kg, IM, bid for 6 injections)

Control of Contagious Bovine Pleuropneumonia ×

- 1-Quarantine, restricted movement •
- 2-Culling •
- 3-Vaccination •

-It has been eradicated in many countries by culling of all infected and exposed animals.

- **the disease can be eradicated by quarantine, blood testing, and culling. Where cattle cannot be confined,**

the transmission of infection can be limited by **immunization with attenuated vaccine (T1/44 strain).**

Treatment is recommended only in endemic areas because the organisms may not be eliminated, and carriers may develop.

Tylosin (10 mg/kg, IM, every 12 hours, for six injections) and

- danofloxacin 2.5% (2.5 mg/kg/day for 3 days) have been reported to be effective.