**Listeriosis**

 Its infectious disease, affected of domestic animals, and characteristic by meningoencephalitis, abortion and septicemia.

*Etiology:*

*Listeria monocytogenes G+* coco bacilli, no spore forming, non capsulated, motile at room temperature & non motile at 37ʗo (lose its flagella).listeria highly resistance to environmental condition ,the organism persist actively in concentrate grain and feed more than 100days, in meat and bone powder more than 4 months, in marshy more than 1 year.

*Listeria* highly susceptible to disinfectant like formalin ,sodium hydroxide, potassium permanganate.

*Epidemiology*

 1-many animals carry the organism normal and normal bowel inhabitant.

2-Sheep, Goat, Cattle, Buffalo, Horse, Dog, Cat, Birds and Human are susceptible.

3-predsposing factors increase the development of the disease included.

1. Heavy feeding silage (especially bad quality), which exert effect by increase the susceptibility of the host or by providing suitable media of the growth of the organism. (*Listeria* required alkaline media for growth and the bad quality of silage provide this media)
2. Sudden change in weather to very cold &wet, long period of flooding.

C- Unsanitary condition, overcrowding of animal house.

4- Sources of infection

Ι- Recover or carrier animal alimented the organism through feces, urine, and milk for long time.

Π- Aborted fetus, fecal membrane &vaginal discharge it can contaminate pasture, water &feed.

Ш- The micro organism localize in semen, which means the disease can transmitted by artificial insemination or coitus.

5-mode of infection

1. Direct contact.

B- Ingestion of contaminated food &water.

 C- Mechanical transmission by biting insect.

D- Affected birds may contaminate food &water.

E- Artificial insemination or natural service.

F-The penetration may occur through oral or intestinal mucosa.

G-The disease is commonly occurring in winter and highest prevalence in the months of December through May.

PATHOGENESIS

In most animals, ingestion of the organism, with penetration of the mucosa of the intestine, leads to an inapparent infection with prolonged fecal excretion of the organism and to a subclinical bacteremia, accompanied by excretion of the organism in milk. Septicemic listeriosis, occurs most commonly in neonatal ruminants and in adult sheep and goats, particularly if they are pregnant .

The organism is a facultative intracellular pathogen that can infect cells, including intestinal cells, by directed endocytosis.

 **In pregnant** animals invasion of the placenta and fetus may occur within24 hours of the onset of bacteremia. Edema and necrosis of the placenta leads to abortion, usually 5-10 days post infection.

**Encephalitis**

Encephalitis in ruminants occurs as an acute inflammation of the brainstem and is usually unilateral. The portal of entry is by ascending infection of the trigeminal or other cranial nerves following loss of the integrity of the buccal mucosa resulting from trauma, the shedding of deciduous or permanent teeth or from periodontitis.

**Mastitis**

*L. monocytogenes* is rarely found to be a cause of mastitis in cattle, despite the fact that it can be common in the dairy environment of herds that have milking practices that could be conducive to the introduction of environmental pathogens into the udder.

 **Clinical signs:**

**1-meningoencephalitis**

1-it observes in all species and it’s more acute in lamb &calves.

2-There is involuntary muscle movement of the jaw (drooping jaw) salivation &dullness.

3-There is deviation of the head to one side (it may be retroflex or ventroflex depending on localization of lesion.

4- The deviation of the head cannot be corrected activity by the animal and if it corrected by the owner the head return to the previous position.

 5- Circling movement in small circle with the direction of deviation.

 6- Ataxia with fall the animal to one side.

7- Unilateral facial paralysis and the ear, eyelid, lips of effected side showing a flaccid paralysis.

8-Keratitis corneal ulceration, panophthalmitis &blindness are also recorded.

9- Systemic reaction, fever 41-42ʗ, increase respiratory & heart rate.

10- Final the affected animal are recumbence &unable to rise and death occur due to respiratory failure.

**Π- Abortion form manifested by:**

1. Abortion of affected animal in late stage of pregnancy.

2- Retention of placenta.

3-Still born &new born animal, born weak &die quickly.

**Ш septicemia form manifested by*:***

1. Acute septicemia which manifested by sudden death especially in lamb &calve with high mortality rate.
2. Sever systemic reaction with found weakness &diarrhea.

**Clinical pathology:**

1- Isolation of the organism, fecal membrane and aborted fetus.

2- Serological test.

**Differential diagnosis**

**Encephalitis**

• Pregnancy toxemia in sheep

• Nervous ketosis in cattle

• Rabies

• Polioencephalomalacia

• Middle ear disease

• Scrapie

**Abortion**

• Causes of Sheep abortion.

• Causes of Cattle abortion.

**Gastroenteritis**

 • Salmonellosis

**Necropsy finding**

1- Cloudy of the cerebrospinal fluid.

2- Congestion of meningial vessels and present micro abscess.

1. Multiple foci of necrosis in liver, spleen &myocardium especially in septicemic form.
2. Small yellow foci of necrosis in liver, small abomasums erosion &yellow orange meconium are seen in aborted fetus which are edematous &autolysis.

**Treatment**

 1-chlorumphenicol 10-20 mg/kg .B.W.I.V. or I.M. for 5 days (nervous form)

 2- Procaine penicillin 44000 IU/kg. B.W. I.M for 7 days. ’

 3-chlorotetracycline 5-10mg I.V 5days.