Clostridial Diseases

Clostridial organisms of various types are found in the soil, where they can survive for a very long time. Most clostridial organisms can also occur quite naturally in the gut of healthy animals. Sheep can be infected with various clostridial diseases – black leg, botulism, malignant edema, red water disease, enterotoxemias (several types), and tetanus – but the most common are enterotoxemia types C & D and tetanus.

**Enterotoxemia type C (hemorrhagic enteritis, bloody scours)**
Enterotoxemia type C is caused by *Clostridium perfringins* type C and affects lambs during their first few weeks of life, causing a bloody infection of the small intestine. It is often related to indigestion and predisposed by a sudden change in feed such as beginning creep feeding or sudden increase in milk supply. Treatment (antitoxin injected under the skin) is usually unrewarding. Vaccination of pregnant ewes 30 days before lambing is recommended as prevention.

**Enterotoxemia type D ("classic" overeating disease, pulpy kidney disease)**
Overeating disease is one of the most common sheep diseases in the world. It is caused by *Clostridium perfringins* type D and most commonly strikes the largest, fastest growing lambs in the flock. It is caused by a sudden change in feed that causes the organism, which is already present in the lamb's gut, to proliferate causing a toxic reaction.

It is most commonly observed in lambs that are consuming high concentrate rations, but it can also occur when lambs are nursing heavy milking dams. It usually affects lambs over one month of age. Treatment (antitoxin injected under the skin) is usually unrewarding. Vaccination of pregnant ewes 30 days before lambing is recommended as prevention.

**Tetanus (lock jaw)**
Tetanus is caused by *Clostridium tetani*, a soil inhabitant that is a prolific spore producer. This disease is usually related to docking and castrating by elastrator bands, though any wound can harbor the tetanus organism.

Signs of tetanus occur from about four days to three weeks or longer after infection is established in a wound. The animal may have a stiff gait, "lockjaw" can develop and the third eyelid may protrude across the eye. The animal will usually go down with all four legs held out straight and stiff and the head drawn back. Convulsions may occur and the animal.

Treatment consists of the tetanus anti-serum and antibiotics. It is usually unrewarding. Tetanus can be prevented by vaccinating pregnant ewes 30 days before lambing. If pregnant ewes were not vaccinated for tetanus, the tetanus anti-toxin can be administered to lambs at the time of docking and/or castrating. The tetanus anti-toxin provides immediate short-term immunity and can be used at the time of docking and castrating to prevent disease outbreaks.
Less common Clostridial Diseases

**Enterotoxemia type B (lamb dysentery)**
*Clostridium perfringins* type B causes lamb dysentery. It usually affects strong lambs under the age of 2 weeks. Symptoms include sudden death, listlessness, recumbency, abdominal pain, and a fetid diarrhea that may be blood-tinged. On post-mortem, intestines show severe inflammation, ulcers, and necrosis. The mortality rate approaches 100 percent. *Cl. perfringins* type B is not common in the U.S., but is frequently found in England, Europe, South Africa, and the Near East.

**Black Disease**
Black disease occurs in sheep in areas where liver flukes are known to occur. Infections are caused by the bacterium *Clostridium novyi*, which becomes active in the liver tissue damaged by the liver fluke. Control relies on vaccination and elimination of liver flukes.

**Blackleg**
Blackleg is disease of cattle and less frequently of sheep. It is caused by the soil-bourne bacteria *Clostridial chauvei*. The disease develops rapidly in affected animals and often deaths occur before the owner has noticed any sickness. Vaccination is the only means of protection against blackleg.

**Malignant Edema**
Malignant edema is caused by the bacterium *Clostridium septicum*. In sheep, blackleg and malignant edema are indistinguishable. The disease is not common in sheep in North America. In areas where the disease is known to occur, lambs can be vaccinated.