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Commentary Article Open Access

Overview of Blue tongue disease in animal

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ABSTRACT

Bluetongue disease known as insect-borne disease or viral disease which is generally affects sheep, cattle, deer, goats and camelids (camels, llamas, alpacas, guanaco and vicuña). Although sheep are most targeted by this disease, cattle are the main mammal reservoir of the virus and are critical in the disease cycle. The disease generally not spread by contact and is only transmitted by insect vectors (midges of the *Culicoides* species). The disease is causes by a virus belonging to the family *Reoviridae*. Bluetongue virus is a common disease in many countries. now endemic areas exist in Africa, Europe, the Middle East, North and South America and Asia as well as on some of islands such as Australia, the South Pacific and the Caribbean.

Keywords: Blue tounge disease, Diagnosis, Treatment

COMMENTARY

Bluetongue disease known as insect-borne disease or viral disease which is generally affects sheep, cattle, deer, goats and camelids (camels, llamas, alpacas, guanaco and vicuña). Although sheep are most targeted by this disease, cattle are the main mammal reservoir of the virus and are critical in the disease cycle. The disease generally not spread by contact and is only transmitted by insect vectors (midges of the *Culicoides* species). The disease is causes by a virus belonging to the family *Reoviridae*. Bluetongue virus is a common disease in many countries.

Historically, bluetongue virus has been found in tropical and subtropical areas. However, now endemic areas exist in Africa, Europe, the Middle East, North and South America and Asia as well as on some of islands such as Australia, the South Pacific and the Caribbean. Multiple serotypes are found in many regions. Outbreaks may occur outside endemic areas, but in most cases, the virus does not exist once cold weather kills the *Culicoides* (midges) vectors. More recently, due to climate change and trade patterns increasing outbreaks in temperate regions including Northern Europe in recent years with outbreaks of up to 9 different serotypes occurring in Europe over the last 10 years. The most significant of which was the BTV-8 outbreak in Northern Europe in year 2006-2008. Even more recently has been the distribution of BTV-8 in southern France in autumn 2017.

Bluetongue virus infection has badly impact on sheep production in many countries on the African continent and elsewhere. Losses result primarily from mortality, reduced production during protracted convalescence including poor wool growth and reduced reproductive performance including temporary ram infertility.

Mortality rates can be high, with an average of 5% in the 2006 due to BTV-8 outbreak in the Netherlands, though in some flocks this was over 70%.

Symptoms

The clinical signs and symptoms of Bluetongue, which vary depending upon viral strain and animal breed, follow an incubation period of four to 12 days.

Clinical signs are most apparent in sheep, where the disease is differentiated by fever and widespread hemorrhages of the oral and nasal tissue then excessive salivation and nasal discharge. In cases of acute condition the lips and tongue become swollen and this swelling may be extending below the lower jaw. Lameness, due to swelling of the cuticle above the hoofs and emaciation, reduced feed consumption because of painful inflamed mouths and this is may also be symptoms of this disease. The blue tongue that gives the disease its name occurs only in small number of cases. Convalescence of surviving sheep is slow. The high fever in sheep shows wool breaks, which reason of production losses. Affected sheep have a fever up to 42.0°c and appear stiff and feel reluctant to move. They often acquire an arched back stance with the neck extended and the head held lowered. There is swelling of the face and ear and also pulmonary oedema found which may cause breathing difficulties. Erosions may proceed to the lips progressing to ulcers. There is often profuse salivation, and a serous to mucopurulent nasal discharge found reddening of the coronary band and around the muzzle and mouth. The tongue may become swollen and lack of oxygen may make the tongue and mucous membranes appear blue (hence the name of the disease).

Bluetongue may also cause pregnant sheep to abort and infection during the breeding season may resultin a large percentage of early embryonic losses with sheep returning to oestrus at irregular intervals. Foetal deformities similar to those seen with Schmallenberg virus can also sometimes occur.

Goats, cattle, and wild ruminants such as deer can appear healthy at time of infection. This can causes to silent spread by midges feeding on the infected animals. Affected cattle are febrile (up to 40.0°C) and appear stiff due to swelling of the coronary band at the top of the hooves (coronary band) and are very reluctant to move. There is severing to mucopurulent nasal discharge and erosions on the muzzle with sloughing of the mucosa. There is lacrimation but no obvious signs of eye lesions. Mortality rates are generally much lower in cattle than in sheep. The virus cannot be transmitted between suspectsof infection animals without the presence of the insect carriers. The incidence and geographical distribution of bluetongue basically depends on seasonal conditions, the presence of insect vectors, and the availability of the susceptible species of animals. The insect carriers, biting midges, prefer warm, moist conditions and are in their greatest numbers and most active after rains.

Disease control measures

The strategy is to contain the outbreak and minimize trade impact. Activities include:

- Impose restriction of movement of animals if BTV is suspected
- Confirmation of suspected cases by performing laboratory tests
- Zoning carried to define infected and disease-free areas
- Vaccination of susceptible animals carried out
- Action plan to determine the extent of virus andvector distribution
- Vector action plan and control strategies

Diagnosis and treatment

Diagnosis is based upon clinical signs & symptoms, virus detection via PCR and/or seroconversion to bluetongue virus.

- The first step taken is to contact your veterinarian.
- The next step taken is to work with your veterinarian to obtain blood samples from animals for diagnostic testing performed to confirm whether the animals are infected with BTV or not. At least 26 different serotypes of BTV have been detected with potential for still more to be discovered, therefore it is importantto have a single test that can detect any of these viruses.
- If BTV is verified then the next step is to serotype the strain to apply the appropriate vaccine.
- Virus diversity needs to be closely monitored and diagnostic by test tools' capabilities regularly tested todetect new variants.
- Many countries are establishing action plan and management programs to help veterinarians and farmers battle BTV when detected. As always, remain vigilant monitoring for BTV in your herd, especially in warm, humid weather conditions. Treatment is limited to antibiotic therapy used to controlsecondary bacterial infections.