Infectious Bovine Rhinotracheitis (IBR)

Infectious bovine rhinotracheitis is a highly infectious and contagious disease of cattle. It is caused by a virus known as Bovine Herpes Virus 1 (BVH1). Two forms of the disease exist, the more common respiratory disease which is spread by aerosol and the genital form which is contracted venereally.

Pathogenesis

Respiratory infection is transmitted by direct contact between animals or those sharing the same air space. Once infected with BVH1, either by a field strain or a live viral vaccine, an animal will remain infected for life. These animals are said to be latently infected and when stressed (e.g. calving, ill, moved) will start shedding the virus (reactivation) and possibly show signs of disease (recrudescence). Thus all cattle in herds where IBR is endemic have the capacity to spread disease without clinical signs being present.

Clinical Signs

Incubation periods for the disease are variable. However, clinical signs are commonly seen 10-20 days after the introduction of an infected animal into a susceptible group.

Historically, the respiratory form of IBR has presented in a classic format

- **Conjunctivitis** – reddening of the lining of the eye and eyelid with a water discharge
- **Nasal Discharge** – ranging from watery to purulent, with reddening of the nasal mucosa
- Marked rise in temperature >104°C (lasting only a couple of days)
- Increase in rate and effort of respiration
The signs vary considerably from mild to severe, depending on the strain of virus and age of animal. When the infection is introduced to a naïve herd peracute disease leading rapidly to death is not uncommon. Other animals may show chronic respiratory disease, loss of condition and die from complications many months later.

Recently we have seen the emergence of an atypical syndrome of reduced productivity within the herd:-

- Poor reproductive performance
- Reduction in milk yield
- Coughing

**Diagnosis**

Diagnosis is often based on a combination of the following:-

1. **Clinical Signs**
2. **Bulk milk antibody testing** will indicate the status of a dairy herd. A positive result is indicative of infection within the herd.
3. **History** of a new animal or group entering the herd
4. **Nasal swabs** – fluorescent antibody staining
5. **Paired blood serology** – showing a rising antibody titre.

Single blood samples from individuals are of limited significance as latent carrier animals may produce a negative antibody result despite being infected.
Treatment

- **Individual animals** showing clinical signs should be treated with an appropriate antibiotic to prevent secondary bacterial infection and a non-steroidal anti-inflammatory (eg. Metacam or Flunixin).
- **Herds** with a number of clinical cases should be treated with a live intranasal form of the vaccine (Tracherine / IBR Live Marker).

Prevention

**Management** – a closed herd, with good biosecurity measures is best, combined with regular monitoring of herd status with bulk milk antibody testing.

**Vaccination**

It is important to understand that IBR vaccines do not stop naive individuals from becoming infected or latently infected animals from shedding virus. They will however reduce the severity of clinical disease and the amount of virus shed. It is not uncommon to see signs of IBR in a vaccinated herd, especially if approaching the end of the vaccine’s effective period.

**Live Intra-nasal vaccines** (Tracherine / Rispoval IBR Marker Live) given in the face of a severe disease outbreak have been shown to provide an earlier onset of immunity and elicit an interferon response which provides additional non-specific viral protection.

**Summary of available vaccines and protocols for use**

1. **Tracherine (Live, non-marker)**
   
   This should be given intranasally when herds experience severe clinical disease and followed 6 months later with two injections of Rispoval IBR inactivated vaccine given 3-5 weeks apart.
2. **Rispoval IBR-Marker Live Vaccine**
   This should be given to animals showing clinical signs of IBR, in a herd that was previously naïve or heifers entering an endemic herd. It can be given intranasally or by intramuscular injection. This vaccine can be used routinely every 6 months.

3. **Rispoval IBR-Marker Inactivated Vaccine**
   This vaccine is designed to be used in endemically infected herds where the amount of shedding and thus infective pressure needs to be reduced. Two injections should be given subcutaneously 3-5 weeks apart and then subsequently once every 6 months.

For further advice please speak to your vet