

Infectious Bovine Rhinotracheitis (IBR, BHV 1)

Phil Scott BVM&S DVM&S DIPECBHM CERTCHP DSHP FRCVS

Introduction

IBR is a highly contagious and infectious viral disease that affects cattle of all ages. Infection occurs by inhalation and requires contact between animals spreading quickly through the group. The disease is characterised by inflammation of the upper respiratory tract. The virus that causes IBR, Bovine herpes virus 1 (BHV 1) also causes infectious pustular vulvovaginitis in the female, and infectious balanoposthitis in the male and can cause abortions and foetal deformities. IBR is endemic in the UK with around 40% of cattle having been exposed to the virus in the past. Infected cattle develop a latent infection once recovered from the initial infection and despite appearing clinically normal may suffer recrudescence of disease when under stress.

Clinical signs

The primary clinical signs of IBR are respiratory ones and in milder cases can be confused with other causes of pneumonia in cattle. In milder cases, conjunctivitis, occasional coughing and poor milk yield may be the only signs noticed. Some strains of virus do however cause severe disease.

Clinical signs generally first appear two to three weeks following transport, sale, housing or other stressful events such as calving. During an outbreak of IBR, the morbidity rate may be 100% but the mortality rate is generally less than 2%. The first two or three cattle affected often develop the most severe clinical signs.

Affected cattle lose their appetite and may develop a high fever (41-42°C) with purulent ocular and nasal discharges. Clinical signs vary in severity with strain of virus. Severely affected animals are very depressed, slow to rise, and stand with the head held lowered.



Suspected IBR in a recently purchased Charolais bull. The bull was febrile (41.5°C). The lungs were also scanned to check for chronic suppurative pneumonia.

Eyelids may be swollen with conjunctiviti and there may be ulcer on the nose in severe cases. There are no oral lesions but there may be drooling of saliva due to ruminal stasis. There is halitosis from pus in the larynx and trachea, and varying degrees of dyspnoea. Affected animals cough frequently and palpation of the larynx is resented. There is an increased respiratory rate but no abnormal lung sounds except sounds referred from the upper respiratory tract. Inappetence, weight loss and milk drop often occur and can be severe. Death is unusual but is caused by severe damage, necrosis and secondary bacterial infection of the trachea with accompanying inhalation pneumonia.

“PREVENTION IS BETTER THAN CURE”

Plan for health with your vet - get a veterinary health plan

NADIS

Animal Health Skills



Purulent nasal discharge in a purchased steer with suspected IBR.

IBR virus enhances the pathogenicity of *Moraxella bovis* (pink eye) and severe infectious keratoconjunctivitis lesions can develop in calves.

Differential diagnoses in individual cattle

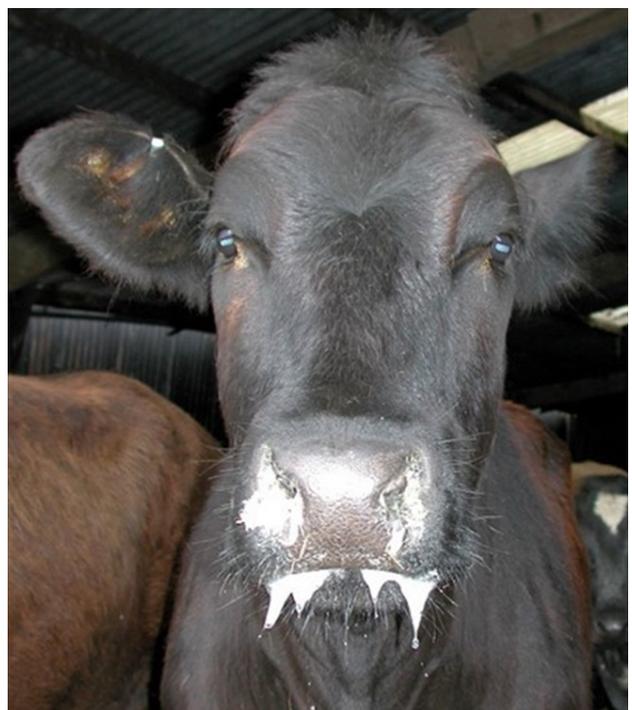
- Pneumonia
- Malignant catarrhal fever
- Mucosal disease



Malignant catarrhal fever should be differentiated from IBR.



Recrudescence of chronic suppurative pneumonia in a dairy heifer two weeks after calving



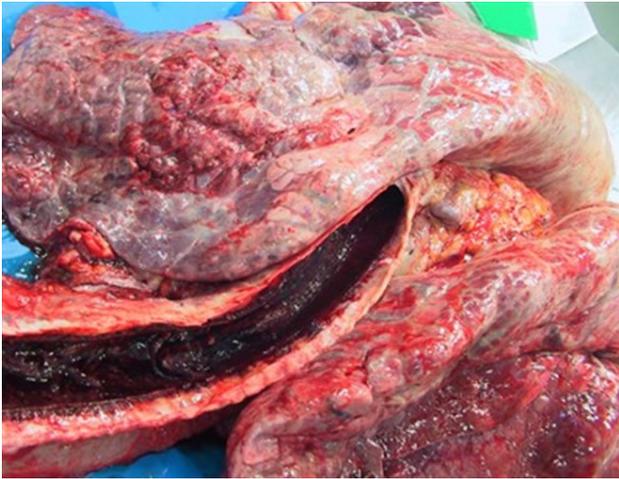
Foot and mouth disease

Differential Diagnosis in a group of cattle

- Bluetongue.
- Foot and mouth disease
- Other causes of respiratory disease in cattle (bovine parainfluenza virus, bovine respiratory syncytial virus, bovine coronavirus, bacterial pneumonia, lungworm)

Diagnosis

Diagnosis of IBR infection is via serology (blood samples) for latent infections or direct detection of the virus (PCR or fluorescent antibody tests on ocular or nasal secretions) for active infections.



Necropsy findings of severe tracheitis in a beef steer that had died from IBR.

Measuring bulk milk antibody titres can be a very useful means of determining IBR status of the herd. However, a negative bulk milk result does not necessarily indicate that a herd is IBR-free as up to 20% of the milking herd can be latently infected with IBR before the bulk milk result will become positive, therefore blood testing is essential to confirm IBR-free status of a herd.

Treatment

There is no specific treatment for IBR, secondary bacterial infections can be managed with antibiotics and animals with a high fever treated with non steroidal anti-inflammatories. Preventative vaccination of the remaining herd members may aid in minimising disease spread.

Management/Prevention/Control measures

There are a variety of effective IBR vaccines available, including marker vaccines that allow vaccinated animals to be distinguished from naturally infected ones on serology tests. Some vaccines are multivalent ones including other respiratory tract pathogens of cattle. IBR vaccination is inexpensive, either by single intranasal or intramuscular injection and is incorporated into veterinary herd plans. Elimination of the virus

from closed herds is possible with testing and vaccination. But keeping herds free from IBR requires careful biosecurity including vaccination and quarantine of newly purchased cattle of uncertain status. Some European countries have achieved eradication of IBR and export to these countries requires a negative test for the virus, a national eradication programme is not currently planned for the UK.



Purchased beef cattle.

NADIS seeks to ensure that the information contained within this document is accurate at the time of printing. However, subject to the operation of law NADIS accepts no liability for loss, damage or injury howsoever caused or suffered directly or indirectly in relation to information and opinions contained in or omitted from this document.

To see the full range of NADIS livestock health bulletins please visit www.nadis.org.uk

"PREVENTION IS BETTER THAN CURE"

Plan for health with your vet - get a veterinary health plan

NADIS

Animal Health Skills