

Infectious Bovine Rhinotracheitis

A PowerPage Presented By



Infectious bovine rhinotracheitis (IBR) is a viral disease of cattle capable of having several clinical manifestations including **abortion, ocular disease and respiratory disease**. It is caused by Bovine Herpesvirus-1 and was originally recognized in the 1950s. This PowerPage will review clinical signs, diagnosis, and management of IBR.

Key Points

- Caused by a single serotype of Bovine Herpesvirus-1, with 3 subtypes called BHV-1.1 (respiratory), BHV-1.2 (respiratory and genital), and BHV type 5 (neurologic)
- Causative agent for **infectious pustular vulvovaginitis** and rhinotracheitis, also called “**Red Nose**”
- Can cause **abortion** by using modified live vaccine on pregnant cows
- **Six forms** of disease

Clinicopathogenesis

Transmission

- One of the most common infections of cattle in the US
- Latent infection maintained in ganglia
- Airborne or contact transmission
 - Can also have spread via:
 - Breeding
 - In utero
 - During birth if passing through an infected vagina
- Rapid spread from those infected or recovered carriers to new arrivals
- Stress may result in recurrence of infection in those previously recovered

Six Main Forms of Disease

- **Respiratory**
- **Abortion**
- **Ocular**
- **Infectious pustular vulvovaginitis**
- **Generalized neonatal infection**
- **Encephalitis**

Clinical Signs

Respiratory

Important feedlot disease with role in bovine respiratory disease complex

- Fever 104-107°F
- Immunosuppression
- **Red Nose** (inflammation of muzzle and nostrils) and nasal discharge. Often see small white plaques in nares
- Decreased appetite, depression, and rapid breathing

- Usually the entire herd is affected
- Tracheitis, may have nonproductive cough
- Death uncommon unless secondary bacterial pneumonia occurs

Ocular

- May occur alone or in conjunction with respiratory form
- **Severe conjunctivitis**
- **Excessive clear ocular discharge with corneal opacity in some cases**
 - May make the surrounding haired areas look crusty
 - Differentiate from *Moraxella bovis*

Infectious pustular vulvovaginitis

- Vulvar discharge
- Dairy cows show drop in milk production
- **Red spots and pustules lining the vulva and vagina**
- Excessive **tail twitching**
- **Frequent urination**
- Persists for approximately 2-3 weeks
- Males will also get pustular lesions on the penis with exudate and inflammation (balanoposthitis)

Abortion

- Most IBR abortions occur at about **5-6 months of gestation**
- Animals can usually breed back
- Abortion is a result of fetal death and the fetus is typically partially decomposed
- Can **induce abortion by giving modified live virus to pregnant animals or those in contact with pregnant animals**

Neonatal Generalized Infection

- **Respiratory tract, GI tract, liver, kidneys, and adrenals** involved
- Usually **fatal**
- Can be caused by wild virus or live vaccines

Diagnosis

- Clinical signs are not definitive for diagnosis but should be suspected
- Virus isolation or IFA on nasal or conjunctival swabs
- Rise in serum or milk antibodies will confirm exposure

Treatment and Control

- No effective treatment
 - Supportive care and antimicrobials to prevent secondary bacterial infections in respiratory form
 - Flunixin or other NSAID, shade, water and good feed
- Isolate new additions for 30 days prior to introduction to the herd
- Isolate infected animals immediately to prevent rapid spread
- Vaccinate before outbreak
 - Be careful which type of vaccine you use (killed vs. live) to avoid abortion
 - Use either intranasal or IM live vaccines in feedlot aged and adult cattle
 - **Do not use live vaccines in neonatal calves**

