Diagnosis and Treatment of Infectious Enteritis in Adult Ruminants

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KEYWORDS

• Ruminant • Enteritis • Infection • Adult • Diarrhea • Treatment

KEY POINTS

- Viral, bacterial, and protozoal pathogens are the most significant causes of infectious enteritis in adult ruminants.
- The most common consistent presenting sign in ruminants with infectious enteritis is diarrhea.
- Diagnosis of etiology of enteritis has important zoonotic and herd implications.
- Severity of clinical signs with similar pathogens may differ between large and small ruminants.
- Treatment of enteritis is symptomatic to correct fluid and electrolyte imbalances and, when relevant, pathogen-specific treatment.

INTRODUCTION

Enteritis refers to the inflammation of the intestine. Several bacterial, protozoal, and viral diseases cause infectious enteritis in adult cattle and small ruminants. Diagnosis of specific pathogens is warranted, particularly when herd implications or zoonotic implications are considered. This review summarizes the most important differential diagnoses, diagnosis, and management of infectious enteritis in adult ruminants. Important diagnostic samples, diagnostic tests, supportive therapy, and specific treatments for infectious enteritis are discussed.

PATHOPHYSIOLOGY OF INFECTIOUS ENTERITIS IN ADULT RUMINANTS

The pathophysiology of diarrhea secondary to enteritis in adult ruminants is similar to young ruminants. In adult ruminants, diarrhea is more likely to develop due to

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maldigestion and malabsorption secondary to infectious enteritis, whereas osmotic diarrhea is likely to develop secondary to carbohydrate engorgement. Detailed pathophysiologic mechanism of diarrhea in young ruminants please see Meera C. Heller and Munashe Chigerwe's article "Diagnosis and treatment of infectious enteritis in neonatal and juvenile ruminants," in this issue.

PATIENT HISTORY

The most common presenting clinical sign associated with enteritis in ruminants is diarrhea. Patient history should include information regarding the age and use of the animal (eg, dairy, beef, or show), presence of hyporexia or anorexia, duration and progression of diarrhea, number of animals affected or dead in the herd or flock, vaccination history, deworming history, recent dietary or husbandry changes, recent transportation, reproductive status (eg, pregnant), characteristics of the diarrhea (eg, color, odor, and volume of feces and presence of tenesmus, blood, mucus, or gravel), and evidence of abdominal pain (eg, arching of back, treading of hind feet, or lying down).

PHYSICAL EXAMINATION

In clinic settings, ruminant patients should be should be examined in the isolation area according to infectious disease control protocols. In farm settings, a cow may be examined in a sick pen or handling facilities when applicable. In either scenario, the examination room or facility should be cleaned and disinfected after the examination. The examiner should wear personal protective equipment (eg, gloves, boots that can be disinfected, and coveralls).

Although it is necessary to perform a full physical examination in a ruminant patient with enteritis, this review focuses on the specific organ examination for ruminants with enteritis. This includes the following:

- Body condition — enteritis may be associated with weight loss.
- Posture — posture of the patient may indicate evidence of abdominal pain, for instance, abdominal distension, arching of back, treading of hind feet, or lying down.
- Rectal temperature — enteritis is an inflammatory condition, which may cause pyrexia.
- Oral examination — checking for evidence of oral ulceration and hypersalivation (ptyalism). This is important because some viral causes of enteritis also cause oral lesions.
- Assessment of hydration status and mucous membrane color — hydration status and color of mucous membranes (ocular, oral, and or vulva), including capillary refill time should be assessed.
- Abdominal palpation, auscultation, percussion, and succussion — abdominal palpation is practical in adult sheep and goats but unrewarding in adult cattle. Abdominal palpation may help identify evidence of pain or allow palpation of abdominal viscera. Simultaneous auscultation and percussion on the left and right abdominal wall help identify viscera filled with air, including the intestine. Succussion of the abdomen confirms the presence of excessive fluid in abdominal viscera, including the small intestine.
- Rectal examination — rectal examination is practical in cattle but may be delayed in cases of presence of a rectal prolapse (secondary to diarrhea). Rectal examination aids in identifying distended abdominal viscera, including small intestine, rumen, colon, or cecum. If not performed already, characteristics of the diarrhea (eg, color,