A Glance at Common Digestive Diseases in Rabbits

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Abstract:- Rabbits are cherished pets and valuable animals in various fields, including agriculture and science. The popularity of pet rabbits has surged, with various breeds such as the Lionhead Rabbit, Holland Lop Rabbit, Mini Rex Rabbit, Polish Rabbit, and Dutch Rabbit gaining traction. With proper diet and living conditions, rabbits can live up to ten to twelve years. However, domestic rabbits are prone to several infectious diseases, including parasitic, bacterial, and viral infections. The most common ailments in rabbits are skin conditions, respiratory infections, and digestive system issues. Understanding these common diseases is essential for maintaining the health and well-being of rabbits. This review article provides a comprehensive overview of the prevalent illnesses affecting rabbits, detailing their causes, symptoms, prevention methods, and available treatments.

I. INTRODUCTION

Rabbits (Oryctolagus cuniculus) are small mammals in the family Leporidae, order Lagomorpha, and are popular pets as well as important animals in agricultural and research settings. Despite their generally robust nature, rabbits are susceptible to a variety of diseases that can significantly impact their health and well-being. Understanding the common diseases that affect rabbits is crucial for veterinarians, pet owners, and breeders to ensure the health and longevity of these animals. This review article will discuss the most prevalent diseases in rabbits, including their symptoms, causes, prevention, and treatment options. By exploring these conditions, we aim to provide a comprehensive resource for those involved in the care and management of rabbits, highlighting the importance of early detection and proper healthcare practices in maintaining healthy rabbit populations.

II. DIGESTIVE SYSTEM DISORDERS

Gastrointestinal (GI) Stasis

• Description:

GI stasis can be triggered by factors such as a high-fat or low-fibre diet, stress, dehydration, and underlying health conditions. Normally, populations of potentially pathogenic bacteria, like Clostridium and coliform species such as Escherichia coli, are present in small numbers in the cecum (Cheeke et al., 1987).

Symptoms and Diagnosis:

Symptoms include reduced appetite, decreased fecal output, abdominal bloating, and lethargy. A gradual decrease in appetite over 2 to 7 days, followed by reduced fecal production, is common. Feces become scant, dark, dry, and small. Affected rabbits may be reluctant to move, less social, grind their teeth, dig or scratch, and sit in a hunched position. Radiographic changes indicate an ingesta-filled stomach in a rabbit that has been in appetent for several days, suggestive of GI stasis (Oglesbee, 2020).

• Treatment:

Treatment involves rehydration through intravenous or subcutaneous fluids, pain management, promoting gut motility with medications, and dietary adjustments. Severe cases may require surgical intervention.

Gastrointestinal Obstructive Disorders

• Description:

Acute obstruction can be caused by foreign objects like carpet, cloth fibers, locust beans, and plastic. Extraluminal compression of the intestinal tract by neoplasia, postsurgical adhesions, tapeworm cysts, abscesses, and hernias may also occur (Guzman & Graham, 2015). Hair mats or felt-like formations, often 1 to 3 cm in size, are common causes (Harcourt-Brown, 2007). Rabbits with acute obstruction may die due to hypovolemic shock and gas formation, contributing to GI tract distension (Yu, 2014).

• Symptoms and Diagnosis:

Symptoms include sudden cessation of food intake, depression, and a sudden stop in passing feces. Audible gut sounds, frequent position changes, reluctance to move, a hunched posture, and palpation discomfort are common. Severe cases may show signs of shock, hypothermia, bradycardia, and hypotension. Blood glucose concentrations often exceed 300 mg/dL (15 mmol/L), and increased renal values may indicate acute renal failure (Bonvehi et al., 2014). Radiography shows a characteristic "fried-egg" appearance.

• *Treatment:*

Treatment involves warming the patient, stomach compression, correcting fluid and electrolyte imbalances, and pain control. Severe shock may require 7.5% NaCl or hetastarch administration. Pain management includes buprenorphine, butorphanol, or hydromorphone, while NSAIDs are avoided until renal status is confirmed. Sedation Volume 9, Issue 6, June – 2024

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with midazolam or dexmedetomidine may be necessary. Frequent abdominal palpation, pain monitoring, and repeated radiographs are crucial to assess obstruction passage. Rabbits typically recover within 24 hours if the obstruction is passing.

Enteritis (Inflammation of the Intestines)

• Description:

Enteritis in rabbits can result from bacterial infections such as Clostridium or E. coli, or from a diet high in carbohydrates and low in fibre. E. coli bacteria attach to cecal and colonic epithelial cells, causing effacement of the surface microvilli, which inhibits colonic absorption and leads to watery diarrhea. Enteritis caused by *Clostridium piliforme* (Tyzzer's disease) progresses rapidly in infected weanlings, often leading from lethargy, anorexia, and watery diarrhoea to acute death. Proliferative enteritis, caused by *Lawsonia intracellularis*, results in a proliferative enteropathy marked by diarrhea and wasting due to the intracellular bacterium infecting enteric epithelial cells (Lawson & Gebhardt, 2000).

• Symptoms:

Diarrhea, lethargy, decreased appetite, and dehydration.

• Treatment:

Treatment involves antibiotics (if the infection is bacterial), supportive care with fluids, and dietary adjustments. Common antimicrobials include trimethoprim-sulfamethoxazole (30 mg/kg orally every 12 hours) or enrofloxacin (10 mg/kg orally every 12 hours) (Swennes, 2012). Weanlings (2–4 months old) may also be treated with chloramphenicol (30–50 mg/kg orally or subcutaneously every 12 hours for 7–14 days) as macrolide antibiotics are not recommended for rabbits (Oglesbee & Jenkins, 2012).

> Cecal Dysbiosis

• Description:

Cecal dysbiosis is the disruption of the delicate balance of organisms within the rabbit's digestive tract. The cecum, which acts as a large fermentation vat, contains many anaerobic organisms like Bacteroides species, gram-negative oval and fusiform rods, amoebae, and protozoa. Disruption of this balance, often due to an inappropriate diet high in sugars or low in fibre, can lead to an overgrowth of harmful bacteria.

• Symptoms:

Soft, unformed cecotropes, foul smell, bloating, and changes in appetite.

• Treatment:

Treatment includes dietary changes, probiotics, and sometimes antibiotics.

III. DENTAL PROBLEMS

Rabbits' teeth grow continuously throughout their lives. If not properly worn down through chewing, the tooth roots can be pushed deeper into the jaws, leading to abscesses and difficulty eating. Rabbits have six incisor teeth for cutting food, with two large incisors at the front of the upper and lower jaws, and two small additional incisors (peg teeth) behind the upper incisors. Their molars (cheek teeth) are used for chewing and grinding, with hard ridges of enamel on the tips. The jaw section between the incisors and molars, called the diastema, has no teeth.

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Spurs/Spikes or Enamel Points

If the molars don't wear evenly, sharp spurs or points can form, causing painful injuries in the mouth. These can lead to erosions, ulcerations, or cuts on the cheeks and tongue.

Primary Incisor Malocclusion

Malocclusion, where the teeth are misaligned, prevents proper cutting and processing of food. It is most common in rabbits under a year old, especially dwarf breeds. Rabbits fed mainly commercial pellets often do not wear their teeth down adequately. This lack of wear can cause secondary malocclusion of the incisors and lead to the formation of enamel spikes or spurs, resulting in mouth ulcers.

• Description:

Dental issues, such as malocclusion or overgrown teeth, can indirectly cause digestive problems because the rabbit cannot chew properly, leading to reduced fiber intake and subsequent GI issues.

• Symptoms:

Drooling, reduced appetite, weight loss, and changes in fecal output.

• *Treatment*:

Regular dental check-ups, tooth trimming, and ensuring a high-fiber diet to promote natural tooth wear.

> Bloat

• Description:

Bloat is a severe and often fatal condition where the stomach fills with gas. It is less common but very serious.

• Symptoms:

Sudden onset of abdominal distension, pain, lethargy, and difficulty breathing.

• Treatment:

Immediate veterinary intervention is required, often involving decompression of the stomach, pain management, and supportive care.

➤ Cecotrophs

• Description:

Cecotrophs, often mistaken for diarrhea, are soft fecal pellets that resemble a blackberry and emit a strong odour. When not consumed by the rabbit, they tend to stick to the fur around the perineum or smear on the fur and flooring. This is often confused with diarrhea and is a common complaint among rabbit owners. Rabbits may avoid eating their Volume 9, Issue 6, June – 2024

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cecotrophs if they are abnormally formed or if they are physically unable to do so.

➤ Cecoliths

• Description:

Cecoliths are hard lumps of cecal contents often associated with a chronic condition known as megacolon syndrome. This condition is characterized by malformed feces, recurrent cecal impaction, abdominal pain, and anorexia. Rabbits with cecoliths are often underweight and lack normal muscle mass due to their inability to form normal cecotrophs. This disorder, found in homozygous spotted breeds like the English Spot and Checkered Giant, results from a congenital defect in sodium transport into the cecum (Bödeker et al., 1995).

• Symptoms:

Large, malformed feces, recurrent cecal impaction, abdominal pain, anorexia, and weight loss.

• Diagnosis:

A presumptive diagnosis can be made by palpating the cecum for doughy to firm material. Radiographs or ultrasound can confirm the presence of cecoliths. If the intestine is completely obstructed, gas will accumulate in the large intestine.

• *Treatment:*

Treatment includes rehydrating the cecal and colonic contents with intravenous or subcutaneous fluids, providing foods with high water content, and ensuring an appropriate fiber source like grass hay. Intestinal promotility agents and analgesics are often beneficial. If the obstruction does not resolve with medical therapy, surgical removal may be required.

➢ Gastric Nematodes

• Description:

The nematode *Obeliscoides cuniculi* infects both domesticated and wild rabbits in North America. Rabbits contract this parasitic worm by ingesting eggs present in feces. The worm's larvae burrow into the stomach lining and mature into adults, with eggs appearing in feces 16 to 20 days after infection.

• Symptoms:

Many rabbits show no signs of illness, but a high parasite load can cause loss of appetite, lethargy, and weight gain difficulties.

• Treatment:

Ivermectin (Ivomec) is effective against O. cuniculi, administered subcutaneously at a dose of 0.2-0.4 mg/kg and repeated after 10-14 days.

• Prevention and Outlook:

To prevent reinfestation, feed rabbits clean forage free from nematode eggs. The prognosis is generally good, though severely undersized rabbits may not reach their expected adult size even after successful treatment.

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> Pinworms

• Types and Prevalence:

The most common pinworm in pet rabbits is Passalurus ambiguus, though Passalurus nonanulatus also occurs. These parasites are widespread in both wild and domesticated rabbits.

• Location and Visibility:

Adult pinworms reside in the cecum and colon and can be seen with the naked eye. They may also be visible in freshly passed feces.

• Symptoms:

Usually, even large numbers of pinworms do not cause harm.

• Treatment:

Treatment involves ensuring the rabbit's environment and food are clean.

➢ Coccidia

• *Prevalence and Impact:*

Coccidia are the most common parasites in rabbit digestive systems, particularly affecting young rabbits under six months old. Adult rabbits rarely show symptoms. Finding coccidia eggs in feces doesn't necessarily indicate illness.

• Species and Location:

There are twelve species of coccidia in rabbits, all from the genus Eimeria. Most affect the intestines, but Eimeria stiedae targets the liver. Rabbits often carry multiple species simultaneously.

- Treatment Options:
- For Groups of Rabbits:
- \checkmark Add sulfadimethoxine to food (75 mg/kg for 7 days)
- ✓ Add 0.02% sulfamerazine sodium to drinking water
- ✓ Add amprolium 9.6% to drinking water (0.5 mL per 500 mL)
- For Individual Pet Rabbits:
- ✓ Toltrazuril: Single 2.5 mg/kg dose by mouth
- Sulfadimethoxine: 15 mg/kg by mouth every 12 hours for 10 days
- ✓ Trimethoprim-sulfamethoxazole: 30 mg/kg by mouth every 12 hours for 10 days

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IV. CONCLUSION

In conclusion, rabbits are beloved pets and valuable animals in agriculture and research, but they are susceptible to a range of diseases that can significantly impact their health and well-being. Understanding common digestive system disorders, such as gastrointestinal stasis, obstructive disorders, enteritis, cecal dysbiosis, and dental problems, is crucial for ensuring proper care. Additionally, recognizing the differences between diarrhea and cecotrophs, along with identifying and treating conditions like cecoliths, gastric nematodes, pinworms, and coccidia, is vital for maintaining healthy rabbit populations.

Proper diagnosis, treatment, and preventive measures are essential in managing these conditions. Veterinary intervention, appropriate dietary adjustments, and maintaining a clean living environment play significant roles in the health of rabbits. By staying informed about these common diseases and implementing early detection and appropriate healthcare practices, pet owners, veterinarians, and breeders can ensure the health and longevity of their rabbits. This comprehensive overview serves as a valuable resource for anyone involved in rabbit care, highlighting the importance of vigilance and proactive management in preserving the well-being of these cherished animals.

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