Indian Farmer
Volume 10, Issue 07, 2023, Pp. 301-303
Available online at: www.indianfarmer.net
ISSN: 2394-1227 (Online)

Popular Article

OPEN ACCESS

An update on Canine Demodecosis

Dr. Angeline Felicia Bora C[1]., Dr. V.J. Ajay Kumar[2] and Dr. Mathivathani C[1].

[1]Assistant Professor, Department of Veterinary Parasitology
[2]Professor, Department of Veterinary Public Health and Epidemiology
Rajiv Gandhi Institute of Veterinary Education and Research (RIVER), Puducherry – 605 009

**Corresponding author: angelinefeliciabora@gmail.com*

Received:21/06/2023 *Published:02/07/2023*

Introduction

Canine demodicosis is a common inflammatory parasitic skin disease believed to be associated with a genetic or immunologic disorder. This disease allows mites from the normal cutaneous biota to proliferate in the hair follicles and sebaceous glands, leading to alopecia, erythema, scaling, hair casting, pustules, furunculosis and secondary infections. The face and forelegs to the entire body surface of the dog may be affected.
Different types of *Demodex* mites exist in dogs:
1. *Demodex canis:* The most common form of *Demodex*
2. *D cornei:* A short-body form, likely a morphological variant of *D canis*
3. *D injai:* A long-body form
Demodex canis - Red Mange in dogs
In other animals, disease caused is termed "Follicular mange" or "Demodectic mange"

Morphology

- Female longer, elongate, Cylindrical
- Body divided into head, thorax and abdomen

Head

- Has three jointed pedipalp
- One pair of chelicerae
- Single hypostome

Thorax

- Ventral side with four pairs of stumpy legs
- Each leg is three jointed, vulva in female on ventral side
- On the dorsal side in males there is a longitudinal slit which is the genital opening

Abdomen

- Transversely striated

Effects on the host

- Injury to host occurs when mites puncture with their stylet like chelicerae the epithelial cells lining the hair follicles and glands to feed on the cell contents.
- The host response in most cases leads to thrombosis of internal infestations.
- Pustules initially seen on abdomen, neck, legs, also feet, face and thigh regions
- Dogs have repulsive mousy odour / rancid odour
- Itching is less, In dogs both forms are seen
- Clinical signs evident in dogs less than 1 year old- presumably immuno deficient
- 1st appear as mildly erythematous patch above eyes and corners of mouth, associated typically with hair loss- then spreads to forelegs, trunk
- Most resolve without treatment
- Death occurs in severely infected animals

- In generally predisposed or immuno depressed animals and in case of secondary infection, it develops into chronically severe, moist, purulent dermatitis - "Pustular Demodicosis" - unpleasant odour - rancid/mousy
- If generalized, there is intense redness, tenderness of skin which easily bleeds-Death occurs in heavily infested animals
- Mild and moderate hypertrophy of the affected epithelia
- In some cases marked hypertrophy and cell destruction occurs
- Opening of hair follicle and ducts of glands are blocked
- Dermal papule formation and nodules
- Hair loss-secondary bacterial infection-inflammation, pruritus and pustule formation (*Staphylococcus*)
- Lesions occur on face and head and then spread-if untreated, death due to emaciation and toxaemia occurs.

In order to provide a successful treatment, it is important to evaluate:
a) Age of onset
b) Extent and location of skin lesions
c) Presence of secondary infections

a) Age of onset:

i) Juvenile onset:
Demodicosis may occur in dogs 18 months of age or younger as a result of an immunocompromised state associated with endoparasitism, malnutrition, or health debilitation. Puppies may also develop demodicosis due to an immature immune system or mite-specific immunoincompetency.

ii) Adult onset

In dogs older than 18 months of age, demodicosis may occur as a result of immunosuppression due to drugs.

b) Extent and location of skin lesions

Localized Form:
• Four skin lesions or fewer
• Lesion diameter ≤ 2.5 cm
Prognosis for localized demodicosis is good, as most lesions resolve spontaneously within 6 to 8 weeks. Topical therapy with benzoyl peroxide shampoo or gel may be recommended.
Generalized Form:
• More than 4 skin lesions
• Lesion diameter > 2.5 cm

c) Presence of secondary infections

Secondary bacterial and yeast skin and ear infections are common problems associated with canine demodicosis, which aggravate the skin disease and contribute to pruritus. Identifying and treating these secondary infections is very important to the successful treatment of demodicosis. Topical and/or oral antibiotics may be prescribed according to clinical signs and cytology.

Table 1: Canine Generalized Demodicosis: Acaricidal Treatment Options

Drug	Dosage	Adverse effects
Amitraz	0.025%–0.06% topical rinses weekly to every 2 weeks	Hyperglycemia, bradycardia, depression, lethargy, polydipsia, polyuria, vomiting, diarrhoea, transitory pruritus, sedation
Fluralaner	1 tablet PO 12 weeks	Vomiting, diarrhoea, anorexia, flatulence, lethargy
Ivermectin	0.3–0.6 mg/kg PO 24 H	Lethargy; vomiting; neurologic signs, such as tremors, mydriasis, ataxia, coma, death
Sarolaner	1 tablet PO 4 weeks	Vomiting, diarrhoea, lethargy; may cause neurologic signs, such as tremors, ataxia, and seizures

Supportive therapy:

It is extremely important to improve nutrition by feeding a balanced, age-appropriate diet and treating intestinal parasites or other stress factors, particularly in puppies, stray or rescued and sick dogs. Most dogs with demodicosis are treated on an outpatient basis; however, dogs with severe generalized demodicosis, pododermatitis, deep pyoderma, sepsis, pain, fever, dehydration, and complications from underlying diseases may require hospitalization for supportive care. Fluids, systemic antibiotics, and pain medications may be required.

Monitoring and duration of treatment

One of the most common reasons for treatment failure is ending therapy too soon. Clinical resolution usually occurs 0.5 to 6 months sooner than parasitologic cure. Therefore, it is important to rely on length of therapy, rather than clinical appearance, to finalize treatment since clinically improved dogs may still harbor mites.

References

Mueller RS, Bensignor E, Ferrer L, et al. Treatment of demodicosis in dogs: 2011 clinical practice guidelines. *Vet Dermatol* 2012;23(2):86-96, e20-1.

Singh SK, Kumar M, Jadhav RK, Saxena SK. An update on therapeutic management of canine demodicosis. *Vet World* 2011; 4(1):41-44.

Miller WH, Griffin CE, Campbell KL. Parasitic skin diseases. *Muller & Kirk's Small Animal Dermatology*, 7th ed. St. Louis: Saunders,2013, pp 310-313.

Koch, S.N., 2017. Updates on the management of canine demodicosis. *Today's Veterinary Practice*, *7*(1), pp.77-85.