



Dermatophytoses in Animals

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Dermatophytoses are one of the most frequent skin diseases of pets and livestock. Very high cost of treatment, contagiousness among animals, difficulty in implementing control measures, and the zoonotic importance of animal ringworm explain their great importance. A fungal illness known as ringworm, tinea or Dermatophytoses results in a superficial infection of the animal's skin. Dermatophytoses occur frequently in pet animals and in livestock as well, sometimes also in wildlife. In most cases, the lesions are noticeable because the skin's surrounding fur or hair has fallen out. The onset of clinical effects occurs 4 to 14 days following exposure. The dermatophyte infection is in worldwide occurrence and infects human beings too. Many zoophilic species, including *Microsporum canis*, *Trichophyton mentagrophytes*, *Trichophyton equinum*, and *Trichophyton verrucosum*, as well as the geophilic species *Microsporum gypseum*, are responsible for the bulk of cases of dermatophytes being isolated from animals. Ringworm also leads to economic losses in hide and skin industry as lesion scars reappear on leather at tawing and tannery.

Host range

Wide range of mammals, including man, and rarely birds. Juvenile animals are more frequently infected by dermatophytes than adults, which may be connected to older animals developing a greater immune as a result of their more exposure to the fungus rather than an inherent effect of being older.

Epidemiology and transmission

The predisposing factors for the disease are

- ❖ Contact with other infected animals and spores of the fungus.
- ❖ Poor immune response of the animal.

Clinical signs and symptoms

- ❖ Circular alopecia with erythematous margin
- ❖ Red, scaly areas of skin that may be elevated, round, or have expanding edges are among the most noticeable clinical signs and symptoms.
- ❖ The animal's scalp on its head may become infected with fungi, resulting in bald patches.
- ❖ The diseased nails turn yellow, break, and eventually fall off.

Diagnosis

It depends on the area of skin infected and the extent of infection.

- ❖ Clinical signs and symptoms
- ❖ Culturing the fungus on suitable media (DTM)
- ❖ Wood's lamp test- The Wood's lamp examination is a very useful screening tool for *M. canis* infection in pet carnivores and rabbits. Under Wood's lamp, *M. canis* infected hairs fluoresce with an apple-green colour.

- ❖ Direct examination of hairs and scales
- ❖ Delayed type hypersensitivity reactions via intradermal tests

Differential diagnosis

- ❖ Localised demodicosis and bacterial folliculitis
- ❖ Dermatophilosis

Treatment

It is self-limiting diseases in immunocompetent animals. However, antifungal treatment should be systematically recommended in order to shorten the course of the infection viz Clotrimazole, ketoconazole, miconazole, terbinafine, and tolnaftate are some topical antifungal medications that should be administered to an affected animal's skin twice daily. Griseofulvin remains the gold standard antifungal drug for the systemic treatment of animal Dermatophytoses with a dose rate of 25 mg/kg in small animals and 7.5-10 mg/kg in large animals. 2% Tincture iodine topically is used for treatment.

Prevention

- ❖ The skin of the animals should be kept dry.
- ❖ Animal housing needs to be well ventilated with access to sunlight and clean air.
- ❖ Animals that are infected should be kept apart from the herd and kept under close supervision with the appropriate care.
- ❖ Environmental disinfection: bleach and 1% formalin were able to kill all dermatophytes

Control by vaccination

An approved vaccine is available for veterinary use in horses, dogs and cats. The vaccine is inactivated in nature and imparts limited protection against *Microsporum* and *Trichophyton* infestations in animals. Intramuscular injection with a live vaccine of *T. verrucosum* was found useful to protect calves from dermatophytosis. Vaccinated cats with killed cell wall of *M. canis* showed efficiency to stimulate production of high titer of anti-dermatophyte IgG and small cell-mediated response

Conclusion

In veterinary practice, dermatophytoses are among the most common infectious skin diseases in mammals worldwide. Contact with infected animals serves as a source of infection to susceptible ones. The disease is more frequently observed in dogs and cats and may be confused with canine demodicosis. Environmental disinfection, separation of infected animals with the non infected ones and proper treatment can help in control of the disease.