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## Canine demodicosis: An update

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The skin is the largest organ in the bodies of dogs and is unceasingly exposed to myriad of stressful internal as well as external factors. Furthermore, skin is one of the most imperative immunologic structures in dogs, which routinely need supplementation of key nutrients to maintain its integrity. Any subtle changes in the nourishment of skin, as well as variations with respect to its immunological state, can exert noticeable effects on skin and coat conditions of the dogs. Dermatological disorders particularly of dogs, represent the most frequently presented complaints in veterinary practice. Canine cutaneous problems refer to skin abnormalities that are usually caused by inadequate nutrition which may further be associated with hormonal imbalances, in addition to numerous agents, including microorganisms, physical or chemical agents, and immunological reactions.

Demodicosis also known as demodectic mange is an inflammatory ectoparasitic skin disease of dogs and is considered as one of the most common dermatological diseases encountered in small animal practice. Demodicosis is a multifactorial disease that is mainly related to the presence of excessive numbers of Demodex mites (*Demodex canis*). These microscopic demodex mites colonize within hair follicles and, less commonly in the oil glands (sebaceous glands) of the skin of the dogs. It is in the hair follicles where the female parasites lay the eggs. Eggs hatch to release larva, then these larvae undergo numerous larval and nymphal stages to become an adult parasite. Moreover, few of these mites even reside normally on the skin of all seemingly healthy or normal canines. In spite of various researches in this arena, what are the underlying factors that lead to the swift and excessive proliferation of these mite in dogs is largely unknown. Thereby, the pathogenesis involving canine demodicosis is not completely

documented and recognized. However, various genetic/hereditary or acquired disorders affecting the immunity have been proposed by many investigators to play a vital role in the pathogenesis of this disease. The disease primarily affects the dogs less than 1-1.5 year of age, with an immature immune system. The transmission of this parasite seems to be vertical. Newly born pups may get these mites from their mothers by direct contact during nursing shortly after birth. With the advancing age, the immunity of the dogs also increases, so the adult dogs that suffer from demodicosis usually have a weakened or declining immune system pertaining to the poor nutrition, certain illness, immunosuppressive therapy or due to some other reasons. The dogs affected from demodicosis display numerous signs like itching (though may not be severe), losing the hairs in patches (alopecia), pustules, erythema, hyperkeratosis, thickening of skin connected with crust or scale formations, this may also end up in developing secondary skin bacterial infections such as pyoderma. The disease is clinically known to exhibit two forms: Localized demodicosis involves the loss of hairs in patches, which generally starts on the face, particularly around the eyes of the dogs, muzzle, legs. Generalized demodicosis refers to the disease involving widespread sites on body or an entire body region. Demodicosis is a non-contagious disease as it is not spread from an infected dog to a healthy dog. Since the *Demodex* sp. mites exist as normal commensals on the skin of the dog, so the diagnosis is only meaningful when correlation with the history and the clinical signs of the dog is first made. Microscopic observation of the demodex mites in skin scrapings is a reliable and immediate diagnostic method. The demodex mites appear as 'carrot' or cigar shaped' with four pairs of stumpy legs arising from the thorax.

Since the canine demodicosis intricately involves plentiful concomitant factors like age of the dog, nutritional status, breed, usual climatic conditions of the area therefore, even after opting for conventional treatment, dogs suffering from generalized demodicosis have a significantly lower success rate, mainly when the underlying disease or cause cannot be controlled or treated. The most common treatment practices involve an amalgamation of spot-on application of acaricides, subcutaneous ivermectin injection and/or amitraz bath alongwith systemic antibiotics and/or antiseptic shampoo to cure the bacterial infection. Moxidectin, imidacloprid and isoxazolines have been widely considered for treating demodectic mange these days.

Apart from conventional treatment, many investigations have shown the positive effects of various plants, herbal extracts, minerals and vitamins on the demodectic mange. However, more evidence-based studies are required to be conducted to ascertain their efficacy. Neem leaves, *Withania Somnifera*, botanical extracts, Omega 3 fatty acids, vitamins and minerals etc have been used to tackle canine demodicosis and have shown promising results, however, investigating the clinical effectiveness of feed supplementation in small animals still remains a challenge.



## References

- Veena, M., Dhanalakshmi, H., Kavitha, K., Placid, ED' Souza., & GC, Puttalaksmamma. (2017). Morphological characterization of demodex mites and its therapeutic management with neem leaves in canine demodicosis. *Journal of Entomology and Zoology Studies*, 5(5), 661-664.
- Singh, S.K. and Dimri, U. (2010). Use of *Withania somnifera* extract in canine demodicosis. *The Indian veterinary journal*. 87(10), 1091-1092.
- Sandra Koch. (2017). Updates on the Management of Canine Demodicosis. *Today's Veterinary Practice*.

