

## Canine demodicosis - how to solve a problem ASAP?

Demodex mites cause disease in the skin of immune debilitated dogs. *Demodex* are species-specific, follicular mites that are found as a normal resident on most species of animals and in humans. Demodicosis is rare in the horse, uncommon in cats, goats, and cattle, and common in dogs. It is second to flea infestation in the frequency of canine ectoparasites. Although canine demodicosis is not contagious to humans, the disease is discussed because of its frequency of occurrence. There are milder, local form, and the generalized form. A specific subset is the chronic generalized demodex, which is seen in neglected and abandoned dogs, and is a serious illness to fight.

A several enthusiasts has been working on this investigation, with the original aim to help an abandoned dog, and then the rest of those who meet this problem. Many different therapies and recommendations made us irresolute, and so we decided to the wide research, with the help of mathematical tools that have not been used so far.



Fig. 1. The dog cured of chronic generalized demodicosis

The efficacy of canine demodicosis treatments was evaluated based on the systematic review of clinical trials published between 1980 and 2014. Studies were compared regarding conventional acaricides, which were most commonly used in the researches (sorted according to active substances: moxidectin, amitraz, doramectin, ivermectin and milbemycin oxime), their concentration, as well as interval and the way of application (spot-on, dips, orally or subcutaneous). Also, the number of patients involved and average age were recorded. The usage of systemic antibiotic and/or antibacterial shampoos is noted. Data of interest were the treatments outcome: the number of dogs that went into remission after the certain therapy, the number of animals not

responding to treatment microscopically, average duration of therapy, the follow-up period after the therapy was discontinued, the number of patients with disease recurrence during the follow-up, the number of adverse effects and the number of animals with side effects. Dogs lost to follow-up or when the treatment was discontinued, due to various reasons not in connection with the therapy protocol, were not considered. The survey included 106 clinical trials enrolling 3414 cases of generalized demodicosis in dogs. Dogs entered the analysis were only the ones in which the disease occurred naturally, excluding the studies in which transplantation of demodex canis mites was done from other animals, as an inhumane procedure. Statistical and mathematical analyses were applied for prediction of the drugs` effectiveness. Good evidence for recommending the use of milbemycin oxime PO (0.5 mg/kg, daily) and moxidectin spot-on (Advocate<sup>®</sup>, Bayer) weekly is found. A bit less effective showed therapies based on ivermectin PO (0.5 mg/kg, daily), moxidectin PO (0.35 mg/kg, daily) and amitraz dips (0.05 % solution, weekly), respectively. It is important to keep in mind that Advocate<sup>®</sup> is recommended by the manufacturer for use in milder cases.

The dog that has served as inspiration was cured of demodicosis exactly the way our research results showed: advocate has not helped, given the chronic and generalized stage of the disease (not monthly, bi-monthly, nor weekly implementation); milbemycin oxime is expensive concerning the conditions in Serbia and was not used; ivermectin subcutaneously, together with antibiotics, prednisone and improved nutrition has led to a remission that lasts for a year now (Fig.1).

## Publication

[The main factors influencing canine demodicosis treatment outcome and determination of optimal therapy.](#)

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