RETROSPECTIVE STUDY OF CANINE DEMODICOSIS

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The present study was conducted to determine the prevalence of Demodex infection in pet dogs in Nagpur city. A total of 7020 pet dogs admitted to TVCC, Nagpur Veterinary College, Nagpur were investigated for Demodex infection from January 2006 to December 2015. The overall prevalence of demodicosis was found to be 31.17%. Seasonal prevalence was highest in the month of June (35.02%), and October (32.47%) and lowest in December (29.01%) and January (28.16%). The prevalence in male dogs (59.78%) was higher than that in female dogs (40.22%). Dogs of less than 1 year old was more affected (50.23%) followed by more than 2 years (33.87%) and 1 to 2 year old (15.90%).

Keywords: Canine demodicosis, Prevalence, Retrospective.

Canine demodicosis is a common, non-contagious, inflammatory parasitic skin disease, characterized by excessive proliferation of commensal mite, Demodex canis within the hair follicles and sebaceous glands (Verde, 2005 and Shrestha et al., 2015). Canine demodicosis is differentiated into a localized versus a generalized form. Localized demodicosis occurs most commonly in young dogs of less than one year of age, and spontaneous remission occurs in most patients. Localized demodicosis has a good prognosis, with the overwhelming majority of cases spontaneously resolving without miticidal treatment (Scott et al., 2001). Generalized demodicosis may be a severe and potentially life-threatening disease (Mueller et al., 2012). Generalized demodicosis is commonly complicated with a secondary bacterial folliculitis and/or furunculosis (Kuznetsova et al., 2012). The presence of mite causes intense pruritus, which initiates the dog to rub or scratch the infected areas which gradually results in emaciation, anemia and alopecia (Pathak and Bhatia, 1986). Demodex mites are better considered as parasites that normally do not cause adverse effects on their host but that can act as opportunistic pathogens in certain circumstances (Ferrer et al., 2014). This disease development is immunocompetence for this mite, which has a hereditary feature (Scott et al., 2001). Canine Demodicosis is a complex disease involving interactions between skin structure, the immune system and environmental influences. This pose challenges to treat effectively because of acaricide inefficacy and consecutive recurrences and to manage because of the length of treatment, the need to identify and treat underlying causes, demands on the clients and need for frequent follow-up visits.

The present study was undertaken to determine the prevalence of Demodex infection in pet dogs and to analyze the association between prevalence and epidemiological factors (age, gender, month etc.) of canine demodicosis.

Materials and Methods
During the ten years period from 2006 to 2015 altogether 7020 dogs, which were brought to the Teaching Veterinary Clinical Complex, Nagpur Veterinary College, Nagpur with skin affections, were examined clinically. Clinical examination of affected dogs showed persistent itching, alopecia, peri-orbital alopecia, erythematous or purpural lesions especially on face, forelimb, hindlimb while in some cases covered all the body in Generalized demodicosis while in localized demodicosis alopecia, itching, peri-orbital alopecia and erythematous or purpural lesions limited to either face and/or forelegs. Canine demodicosis was diagnosed in 2188 dogs.
Detailed history regarding season, gender and age of each dog was recorded and correlated with the prevalence of demodicosis. The dogs were categorized into 3 groups according to their age as less than 1 year, 1 to 2 years and above 2 years. Diagnosis of demodicosis was confirmed on the basis of anamnesis, detailed clinical examination, dermatological examination and presence of Demodex sp. in skin scrapings.

Results and Discussion

Among 7020 dogs examined of different skin diseases, 2188 were positive for canine demodicosis indicating overall prevalence as 31.17% (Fig 1.). These variations in relative proportion of skin diseases may be due to the effect of different climatic condition in different regions of study. The differences among the results of the present and above earlier studies might be attributed to epidemiological factors, such as weather, seasonal variations, geographical location, and differences in sample collection technique and data collection as also reported by Shrestha et al. (2015). The dermatoses cases were directly proportional to the environmental temperature. In hot and humid months of the year, the cases of skin disease were abundant (36.00%). Similar finding has been reported by Kumar and Haque (2015) who reported that demodectic mange affected 5.88% of all dermatological problems.

![Fig. 1 Year wise number of cases examined and Positive cases](image)

The month-wise prevalence of canine demodicosis in present study was highest 35.02% (Fig 2.) in the month of June followed in October 32.47% and the lowest in the month of December (29.01%) and January (28.16%).

According to gender prevalence of canine demodicosis was found to be more in males 59.78% as compared to the female 40.22% dogs. It is in accordance to the reports of Cai et al. (2014), who reported Demodex canis infection in males was twice as that in females and Shershta et al. (2015) reported 36.7% prevalence in male population and 22.9% prevalence of canine demodicosis in female population, wandering and fighting habit causes male dogs more prone to demodicosis which is also influenced by hormonal levels.

However, sex susceptibility is to be analyzed in light of observation that people in the region prefer male dogs over females because of their masculine look, better vigor and no fuss of unwanted pregnancies as also reported by Sarma et al. (2013).
The present study revealed age wise prevalence of canine demodicosis in dogs less than one year age group was 1099 (50.23%) followed by dogs more than 2 years 741 (33.87%) and dogs from 1-2 years 348 (15.90%) as shown in (Fig. 3). Similar findings are of Elsheikha et al. (2011), who noticed 71.7% prevalence of juvenile onset demodicosis and 28.2% of adult-onset demodicosis; Islam et al. (2013) who also reported that 71.42% of Demodex positive cases were of less than 1 year age and Shrestha et al. (2015) found 49%, 6.9% and 33.3% in puppy, adult and senior age group dogs, respectively, and opined the age could be a risk factor for canine demodicosis. Higher susceptibility of younger dogs observed in this study could be due to lowered body resistance.

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References

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