INFLUENCING FACTORS FOR MANGE MITE INFESTATION OF DOGS IN
CHENNAI CITY

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A retrospective survey was conducted to study the prevalence of mange mite infestation in dogs in Chennai city between 1998 and 2006. The results of 3055 skin scrapings examined from dogs during this period were used to determine the season and age wise prevalence and predisposing factors for mange mite infestation. An overall prevalence for mange mites was 15.2% with demodex infestation being 10.2% followed by sarcoptes (5.2%). The season wise prevalence showed a peak during summer between March and July and the age wise prevalence revealed that the younger age group of 6 to 12 months was more prone to mange mite infestation as compared to adult dogs.

Keywords: Prevalence-Mange mite infestation-Age-Season

Ectoparasites are known to cause a wide range of skin disorders in dogs notable amongst them being intense pruritus, hypersensitivity, mange pyoderma, even anemia and debility, (Araujo et al., 1998).

The most frequently encountered ectoparasites include the mites particularly Demodex sp. and Sarcoptes sp. While demodicosis can be localized or generalized, sarcoptic mange is highly contagious, non-seasonal, pruritic and represents 2 to 4% of dermatology cases, (Didier, 2004). Self trauma and secondary bacterial infections are quite common, Kwochala, 1987.

In the present investigation the prevalence of mites infestation in the pet dog population was examined with retrospective data from the results of 3055 skin scrapings examined during the period 1998 to 2006 and they were used to determine the season and age wise prevalence and predisposing factors for mange mite infestation as mange mites prevalence can be influenced by many factors, (Vivas et al, 2003). The detection of even one mite was considered as a positive result.

Of the total 3055 skin scrapings examined 460 were positive for mites, (15.2%). While Demodex canis was noticed in 10.2% of the mite positive samples, Sarcoptes sp. was observed to be at a lower level of 5.2% (Table 1). The 460 mite positive results were distributed against age of the dogs sampled and the prevalence was found to be higher in 6 to 12 month old dogs with 38.5% being positive for mites (Table 2).

Demodicosis appeared to be on a higher prevalence (66.7%) compared to sarcoptic infections (33.3%) and again the 6 to 12 months age group were found more susceptible to demodex mites (29.1%) while sarcoptes was found to be higher in the 3 to 6 month age group at 11.7% (Table 2).
Demodex infestations were more common from March through July while Sarcoptes showed a much shorter prevalence with a peak in March and declining thereafter (Fig. 1).

In several studies demodicosis was reported to occur more often as was also observed in this study as they are considered commensals on the canine skin, besides, environmental influences, resistance levels of each individual pet may also contribute to the prevalence. The lower prevalence of sarcoptes infestation when compared to demodicosis in this study has been supported by other observations (Nayak et al., 1997, Choie et al., 2000 and Vivas et al., 2003). The typical signs of sarcoptes infestations such as pruritus, ear margin dermatitis and alopecia would invite earlier attention amongst owners for immediate veterinary procedures. Sarcoptic mange has the added problem of being a public health threat (Hewitt et al., 1971) and hence greater attention is warranted in such cases in pet dogs.

Age predisposition has varied opinion. While many studies have reported susceptibility to mange mite in less than one year old dogs as was noted in this study (Weisbroth et al., 1974, Kwochala, 1987 and Nayak et al., 1997), some workers had observed that there was hardly any association between age and mite infestation, (Vivas et al., 2003 and Jani et al, 2003). The age factor in this study may be due to lower resistance in less than one year old dogs, (Solanki et al., 2007) and constant contact with other infected dogs including the carrier dams, (Scott et al., 1979 and Nayak et al., 1997).

Seasonality in the prevalence of mange mite infestation has been reported and in this study demodex infestation was more common from March through July (Fig. 1) as was also observed by Solanki et al, (2007) and Aujila et al., (2000). No specific reports are available for a seasonal distribution of sarcoptes mite infestation, though in this study there was a shorter duration with a peak in March and decline thereafter and this possibly is an influence of the existing weather situation in March which is not very hot or cold.

The prevalence during these summer months can be attributed to closer clipping of hairs during this period which enables infections to be picked up easily by contact and skin is likely to be more conducive location for the mites to survive and hence a higher prevalence is being observed. In comparison to other recent studies on mange mite infestations in India where the prevalence has been reported to be as high as 25 to 30 % (Nayak et al., 1997 and Solanki et al, 2007), the lower figures in this study possibly indicates a very encompassing trend in the awareness amongst the pet owners for early effective therapy in such conditions.

REFERENCES


Influencing factors.....


Table - 1
Total number of positive sample for mange mite infestations

<table>
<thead>
<tr>
<th>Mites</th>
<th>Number of Positive samples</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demodex canis</td>
<td>307</td>
<td>10.2%</td>
</tr>
<tr>
<td>Sarcoptes species</td>
<td>153</td>
<td>5.00%</td>
</tr>
<tr>
<td>Total</td>
<td>460</td>
<td>15.2%</td>
</tr>
</tbody>
</table>

Table - 2
Age wise prevalence for mite infestation

<table>
<thead>
<tr>
<th>Age</th>
<th>No. of Demodex positive samples</th>
<th>No. of Sarcoptes positive samples</th>
<th>Total No. of positive samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3 Months old</td>
<td>103 (22.4%)</td>
<td>36 (7.8%)</td>
<td>139 (29.6%)</td>
</tr>
<tr>
<td>3-6 Months old</td>
<td>50 (10.9%)</td>
<td>54 (11.7%)</td>
<td>104 (22.6%)</td>
</tr>
<tr>
<td>6-12 Months old</td>
<td>134 (29.1%)</td>
<td>43 (9.3%)</td>
<td>177 (38.5%)</td>
</tr>
<tr>
<td>&gt; 1 year old</td>
<td>24 (5.2%)</td>
<td>20 (4.3%)</td>
<td>44 (9.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>307 (66.7%)</td>
<td>153 (33.3%)</td>
<td>460 (100%)</td>
</tr>
</tbody>
</table>

Fig. 1 Mite Infestations in pet dogs (1998 - 2006)