

CLINICO-EPIDIMOLOGICAL STUDIES IN CANINE DERMATITIS

R. Singh, S.A. Beigh, J.S. Soodan, A. Tikoo and H. Tantaray

Division of veterinary Medicine, Faculty of veterinary Science and A.H, SKAUST-J, R.S.Pura-181102, J&K.

To study the prevalence of dermatological problems in canines 930 dogs were examined. The overall prevalence of dermatitis in canines was 23.51% with maximum prevalence in July (38.88%) and minimum (6.38%) during December. Parasitic dermatitis was most prevalent (34.82 per cent) dogs followed by bacterial (25.00 per cent), fungal (18.75 per cent), non specific (14.28 per cent) and nutritional (7.14%). Dogs less than one year of age was mostly affected and among breed Mongrels (67.52%) followed by German shepherd (09.20%) were mostly affected.

Introduction

Dermatological problems are common in dogs and occurrence varies with season, climatic factors, and managemental practice adopted in particular area (Sharma *et al.*, 2008). Skin diseases can be of infectious or non infectious origin. Among infectious cause bacteria, fungus and parasites are the prime cause, while as in non-infectious causes allergic, autoimmune, hormonal or nutritional are important.

Materials and Methods

A total of 930 dogs presented for treatment at Referral Veterinary Clinics and

Teaching Hospital, (VCTH), were examined for the prevalence of dermatosis and 195 cases were found positive for skin diseases of which 112 were studied. For confirmation of bacterial dermatitis, swabs were collected aseptically and skin scrapings were collected from different locations from periphery of active lesions in sterile vials for fungal screenings. Skin scrapings were also collected in 10% KOH for identification of ectoparasite. Blood samples were collected to diagnose mutational dermatosis. The infections other than bacterial, fungal and parasitic were kept in non specific category.

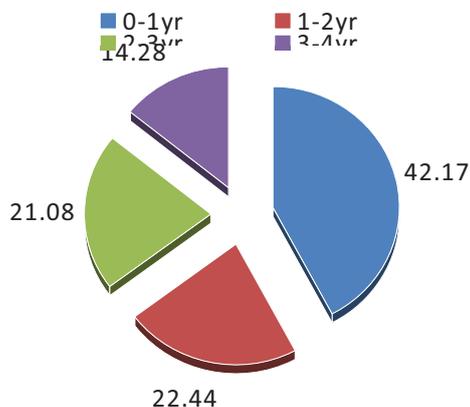


Fig.1. Prevalence of dermatitis based on age

Results and discussion

Overall prevalence of canine dermatitis was 23.51% with maximum cases (38.88 per cent) recorded during July and minimum (6.38 per cent) during December. These findings are in agreement with that of Aujla (1993) and Sharma *et al.* (2008). The highest prevalence during July might be due to hot and humid environment condition favoring the growth of

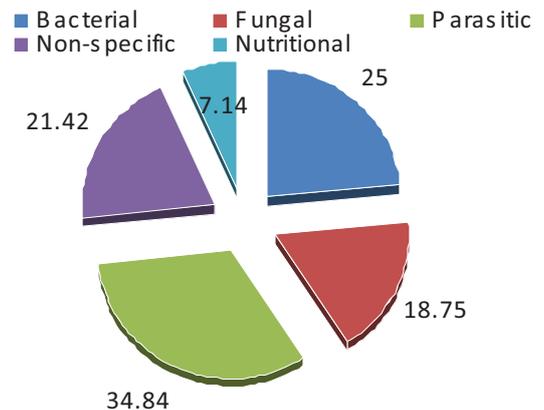


Fig.2. Prevalence based on etiology

mite and bacteria (Upadhyay *et al.*, 2005). Age wise highest prevalence was found in the age group 0-1years (42.17%), followed by 1-2years (22.44%), 2-3years (21.08%) and 3-4years (14.28%) (Fig.1). Among the breeds Mongrels (67.52%) followed by German shepherd (09.20%), Labrador (06.51%), Spitz (04.27%) and Doberman (3%)

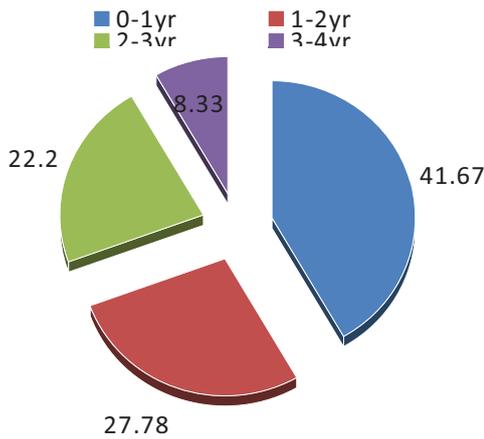


Fig.3. Age wise prevalence of bacterial dermatitis

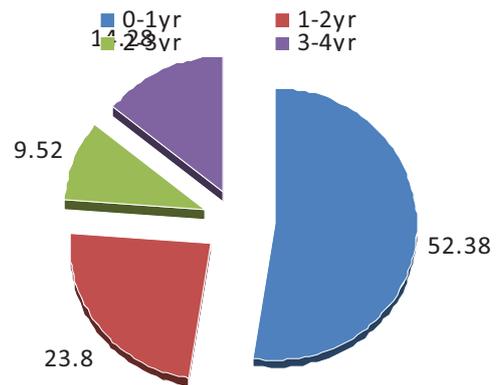


Fig.4. Age wise prevalence of fungal dermatitis

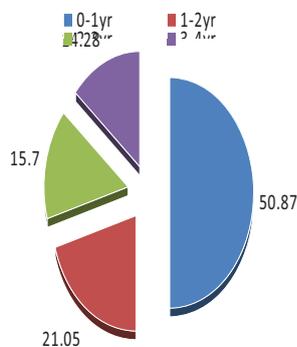


Fig.5. Age wise prevalence of parasitic dermatitis

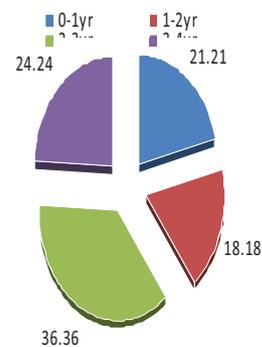


Fig.6. Age wise prevalence of non-specific dermatitis

Prevalence of bacterial dermatitis was 25.00 per cent (Fig.2) which was highest in month of July. Aujla (1993) and Sharma *et al.* (2008) have also reported 31.31 and 28.43 per cent bacterial dermatitis, respectively. Highest prevalence in July could be due to the warm wet weather which favors the growth of bacteria in skin (Roth and James, 1989). Age wise prevalence revealed that the dogs of less than one year of age were most susceptible (41.66 %) followed by dogs of one to two years of age (27.78 %) (Fig.3). Patil *et al.* (1999) and Sharma *et al.* (2008) reported 46 and 37.93 per cent incidence of pyoderma in dogs from one to four year of age group. Poor development of epithelium and lack of specific immunity acquired after first exposure could be the possible reason for infection in young dogs (Hay, 1992). Moreover high body temperature in young animals, high nutritive demand and overcrowding may also increase the

susceptibility of young animals to bacterial infection (Scott *et al.*, 1995). Sex wise prevalence of bacterial dermatitis revealed highest occurrence in female (53.57%) than in males (46.42%). Higher prevalence of infection in females could be due to the various stress factors such as estrus, whelping and lactation, which lower the immunity of these animals making them more prone to these infections. The lesions in bacterial dermatitis was alopecia, erythema, papule, pustule with oozing of purulent discharge, matting of hair, itching with occasional scab formation and were mainly located at the abdomen and groin (51.23 per cent), limbs (30.40 per cent) and dorsal midline (18.37 per cent).

The overall prevalence of fungal dermatitis was found to be 18.75 per cent (Fig.2). Sumathi and Vasu (2009) observed 20.50 per cent occurrence of fungal infection in canine. The prevalence was highest in

November and lowest in August. Higher occurrence of fungal dermatitis during winter month could be due to close contact of the animals in winter and infrequent bathing thereby increasing alkalinity of skin (Sharma *et al.*, 2008). Age wise prevalence revealed highest cases in dogs of less than one year of age group (Fig.4). The possible reason for this could be lack of specific immunity acquired after first exposure in young dogs (Hay, 1992). Further biochemical properties of skin and skin secretions, especially low fatty acids in the sebum may also be responsible for the infection in young ones, as these fatty acids are highly fungistatic (Hay, 1992). Sex wise prevalence revealed that male dogs were more susceptible (52.38 %) than female dogs (47.61%). This could be due to the roaming habits of male dogs during seasonal breeding where they come to close contact with infected dogs. Clinical signs in dogs with fungal infection revealed dry scaly skin lesions, erythema, crust, patchy alopecia with varying degree of itching. Besides, hyperkeratotic, thickened crusted lesions with erythema were also recorded in some cases. The lesions were commonly recorded at dorsal midline (33.23 per cent), whole body (30.51 per cent), hock joint and periorbital region (23.75 per cent), ear (12.51 per cent).

Overall prevalence of parasitic dermatitis was found to be 34.82 per cent (Fig.2). These observations were similar to the findings of Ayodhya *et al.* (2006) and Sharma *et al.* (2009) who observed 36.53 per cent and 33.33 per cent incidence of parasitic dermatitis, respectively. Season wise prevalence revealed highest prevalence in the month of July and could be due to hot and humid environment which favours the survivability of mites (Kwochka, 1987). Age wise prevalence was more in dogs of less than one year of age than the older dogs (Fig.5). Similar observations were made by Ayodhya *et al.* (2006). This might be due to transmission of mites from mother to pup during suckling. Lack of proper immune response in young animals may further contribute to the occurrence of lesions in these animals (Hay, 1992). Sex wise prevalence revealed that males were more susceptible (56.41%) than females (43.59%). Similar findings were reported by Aujla *et al.* (2000) and it could be due to higher wandering and fighting habits in male dogs (Lashkar *et al.*, 2005) and hormonal influence. Main clinical sign in ectoparasitic infestation was pruritis.

Alopecia, erythema, papule, thickening and wrinkling of skin with loss of texture were also recorded. The lesions were mainly located at head/neck (36.21 per cent), thorax, abdomen and groin (24.23 per cent), limbs and paws (17.00 per cent), elbow (13.27 per cent), and shoulder (9.29 per cent). The pathophysiology of pruritis is complicated and the reasons could be the release of proteolytic enzyme, histamine, leukotrienes and various peptidases (Gibson *et al.*, 1991 and Scott *et al.*, 1995). The high rate of involvement of head/neck in parasitic dermatitis might be due to thin stratum corneum, comparatively sparse hairs, high humidity and protection from grooming which make these areas suitable for parasitic infestation.

The prevalence of nonspecific dermatitis was recorded to be 14.28 per cent (Fig.2) with maximum incidence in December and minimum in October. Regarding age wise prevalence, most cases were recorded in dogs between two to three years of age group (Fig. 6). The percentage of male and female dogs affected was recorded as 56.20 and 43.75 per cent, respectively. The highest prevalence in males could be due to high wandering habits of male dogs (Lashkar *et al.*, 2005), making them more prone to allergic reactions. The lesions recorded in non specific dermatitis were itching, licking of paws, hyperpigmentation or depigmentation, erythema, excoriation and rough hair coat. The lesions in non-specific dermatitis were mainly located at back (42.61 per cent), abdomen and groin (26.14 per cent), limbs (22.70 per cent) and tail (8.55 per cent). High rate of involvement of abdomen and groin might be because of trauma due to frequent contact with ground and hypersensitivity to pollutants on the ground. Failure of managerial practices may be the predisposing cause for the non specific dermatoses in canine (Kral and Schwartzman, 1964).

The overall prevalence of nutritional dermatosis was 7.14 per cent. In general the lesions were erythema, excoriation, crust formation, hyperpigmentation or depigmentation and rough hair coat. The skin lesions were mainly located at face (39.37 per cent), dorsum of back (29.42 per cent), limbs and tail (24.53 per cent) and abdomen region (6.68 per cent). Similar finding were reported by Gupta (2008), and the possible reason for most lesions on face could be due to thin

stratum corneum making hyperkeratinization and alopecia more evident.

References

- Ahuja, A. 2005. Canine summer eczema: Clinical case report. *Intas Polyet.* **6** (2): 359-361.
- Aujla, R.S., Singla, L.D., Juyal, P.D. and Gupta, P.O. 2000. Prevalence and pathology of mange mite infestation in dogs. *Journal of Veterinary Parasitology.* **14**: 45-49.
- Ayodhya, S. and Suryanarayana, C. 2006. Epidemiological studies on parasitic dermatitis in canines. *Indian Journal of Veterinary Medicine.* **26**(1): 32-33.
- Gibson, W. T., Westgate, G. E. and Craggs, R. I. 1991. Immunology of the hair follicle. *Annual New York Academics Science.* **642**: 291-300.
- Hay, R. J. 1992. *The skin micro flora and microbial skin diseases.* Pp. 232-263. W.C. Noble, Cambridge University Press, Cambridge.
- Kral, F. and Schwartzman, R. M. 1964. *Veterinary and Comparative Dermatology.* Pp. 35. J.B. Lippincot Company. Philadelphia.
- Kwochka, K. W. 1987. Mites and related disease. *Veterinary Clinics of North America: Small Animal Practice.* **17**(6): 1263-1284.
- Lashkar, D., kalita, D. N. and Neog, R. 2005. Epizootiology of demodectic mange in dogs. *Indian Veterinary Journal,* **82**: 508.
- Patil, S. S., Rao, M. and patil, N. A. 1999. Epidemiology and bacterial isolates is canine pyoderma. *Indian Journal of Veterinary Medicine.* **19**(1):39-40
- Roth, R. R. and James, W. D. 1989. Microbiology of the skin. *Journal of American Veterinary Medical Association.* **191**: 406.
- Scott, D.W., Miller, W.H. and Griffin, C.E. 1995. Muller and Kirk's Small Animal Dermatology. W. B. Saunders Company, Philadelphia.
- Sharma, S. K., Soodan, J. S., Bal, M. S., Khajuria, J. K. and Upadhyay, S. R. (2009). Parasitic dermatitis in Jamm -u region. *Journal of Veterinary Parasitology.* **2**(1): 65-67.
- Sharma, S. K., Soodan, J. S., Raina, B. B., Gupta, S. K and yadav, A. 2008. Prevalence of skin infection in canines. *Indian journal of Veterinary Medicine.* **28**: 137-138.
- Sumathi, D. and Vasu, K. 2008. Etiology of mycotic dermatitis in dogs. *Indian Veterinary Journal.* **85**: 887-888.
- Upadhyay, A. K., Dwivedi, H. P., Singh, S., Kumar, M. and Kumar, S. 2005. Epidemiology of skin infections in dogs at Pantnagar. *Indian Veterinary Journal.* **82**: 763- 764.

