



Allergic Dermatitis Occurrence Pattern in Canine of Jammu Region, India

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ABSTRACT

The study was conducted to record the prevalence of allergic dermatitis in canine amongst the dermatitis cases presented at the Veterinary Clinics and Teaching Hospital, F.V.Sc & A.H., R.S Pura, Central Veterinary Hospital Talab Tillo in Jammu region. Diagnosis was done by intradermal skin testing, IgE level, clinical score status on the basis of CADASI. Prevalence of allergic dermatitis was 1.93% (18/930) with maximum prevalence recorded in month of July (27.77%) from the cases. Amongst the allergic dermatological afflictions in canine population, different types of dermatitis observed were atopic (61.11%), flea allergy (16.66%), contact allergy (16.66%) and drug allergy (5.55%). Dogs belonging to the age group of two to four year were found most susceptible to allergic dermatitis. Males were found to be more susceptible to allergic dermatitis than females. *Staphylococcus* spp. and *Streptococcus* spp. were the main bacteria isolated from secondary bacterial dermatitis cases.

Keywords: Canine, dermatitis, allergic

Dermatological disorders assumes great importance in dogs due to their effect on the animal such as distress, irritation and offensive smell besides being a potential source of a number of zoonotic diseases (Parish and Schwartzman, 1993). Dermatitis in general represents the significant%age of cases in small animal practice (Subramanian *et al.*, 1989 and Sharma *et al.*, 2008a). 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. Nutritional deficiencies might be the major contributing factor, both for infectious and non infectious disorders (Dimri *et al.*, 2010).

In non infectious dermatitis, canine allergic dermatitis (CAD) is most common. Allergic dermatitis refers to any inflammatory skin disease caused by any type of allergy. The unifying characteristic of these diseases is that they cause pruritis and subsequent inflammation. Depending on the etiology, the event may be short-lived or become a lifelong condition. Canine allergic dermatitis thereby constitutes

a serious medical problem in veterinary medicine and is reported to be one of the most common causes.

MATERIALS AND METHODS

Diseased dogs

Dogs suffering from canine allergic dermatitis presented at Referral Veterinary Hospital of the Faculty of Veterinary Science and Animal Husbandry, Sher-e-Kashmir University of Agricultural Sciences and Technology – Jammu as well as Central Veterinary Hospital, Animal Husbandry Department, Talab Tillo Jammu contributed the subjects of study. The study was conducted from 2010 to 2013.

Healthy dogs

Six apparently healthy dogs with no skin affection were kept under the same environmental conditions, irrespective of age, sex and breed were chosen randomly to act as control for the present study.



RESULTS AND DISCUSSION

During the study period, a total of 930 dogs were examined for treatment at Referral Veterinary Clinics and Teaching Hospital and at Central Veterinary Hospital, Animal Husbandry Department (CVH), Tallab Tillo, Jammu. One hundred ninety five cases (20.96%) were found positive for skin diseases. Out of which only 18 cases (1.93%) were found positive for canine allergic dermatitis (Table 1, Figure 1).

Table 1. Overall Prevalence of Allergic Dermatitis in Canine

Month (2010-2011)	Total canine cases presented	Positive cases for dermatitis (%) prevalence	Positive cases for allergic dermatitis (%prevalence)
August	92	20 (21.73)	03(3.15)
September	81	12 (14.81)	02(2.46)
October	77	09 (11.68)	01(1.29)
November	60	06 (10.00)	00
December	47	03 (6.38)	00
January	50	05(10.00)	00
February	64	08(12.50)	00
March	85	19(22.35)	00
April	87	22(25.28)	01(1.14)
May	95	25(26.31)	02(2.105)
June	102	31(30.39)	04(3.92)
July	90	35(38.88)	05(5.55)
Total	930	195 (20.96)	18(1.93)

Figures in parenthesis indicate percentage

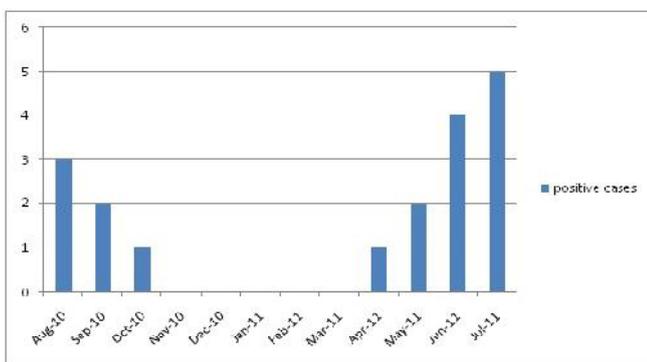


Figure 1. Monthwise Prevalence of Allergic Dermatitis in Canine

Age-wise Prevalence

It was observed during the course of study that 02 (11.11%) dogs were in age group of >1 year, 04 (22.22%) in 1-2 years, 10 (55.55%) dogs in 2-4 years and 02 (11.11%) dogs in 4-6 years. The prevalence being highest in the 2 to 4 years age group of dogs (Table 2).

Table 2. Age Wise Prevalence of Allergic Dermatitis in Canines

Age (years)	No. of Positive cases	%age
0-1	02	11.11%
1-2	04	22.22%
2-4	10	55.55%
Above 4	02	11.11%
Total	18	100

Breed-wise Prevalence

Out of 18 cases 17 (94.45%) were exotic breeds while only 1 case (6.55%) was of nondescript breed. The prevalence was significantly higher in exotic breeds among the breed of dogs. Among exotic breeds the prevalence was highest in German shepherd 06 (33.33%), followed by Labrador 05 (27.77%), Spitz 03(16.66%), Dalmatian 2 (6.5%), beagle 01 (5.55%), nondescript 01 (5.55%) (Figure 2).

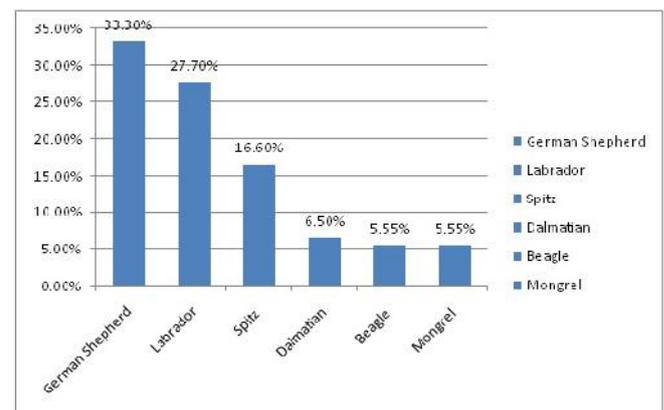


Figure 2. Breed Wise Incidence of Allergic Dermatitis in Canines

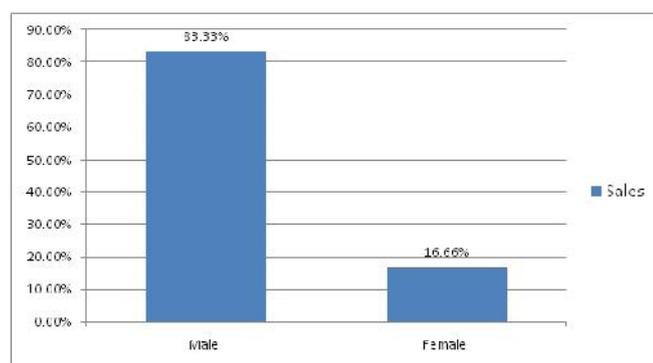


Figure 3. Sex Wise Prevalence of Allergic Dermatitis in Canines

Sex-wise Prevalence

The present study was also done to see the effect of sex on the prevalence of canine allergic dermatitis. During the course of study it was found 15 (83.33%) dogs were male and 3 (16.66) dogs were female. The present study indicates that male dogs were more prone to allergic dermatitis (Figure 3).

Table 3. Life Style, Utility and Feeding Habits of Animals

Patient's Data		No. of cases	%age
Life style	Indoor	08	38.09%
	Outdoor	03	14.28%
	Mixed	10	41.61%
Utility	Pet	16	76.19%
	Guard	05	23.80%
	Hunting	00	00%
Type of feed given	Home made	03	14.28%
	Pre-formulated	14	66.66%
	Mixed	04	19.04%

Season-wise Prevalence

Under present study, the seasons considered were summer (March-June), Rainy (July-October) and winter (November-February). The seasonal prevalence of allergic dermatitis in dogs was recorded highest during summer season (61.10%) followed by rainy season (33.32%) and winter season (5.58%) (Figure 1).

Feeding habit

Variation in prevalence was recorded on the basis of feeding habits and it was observed that dogs receiving non-vegetarian diet (52.17%) were more prone to the allergic dermatitis followed by vegetarian diet (32.60%), vegetarian plus dog food (10.86%) (Table 3).

Types of allergic dermatitis

It was observed during course of study out of total 18 cases maximum cases were of atopic dermatitis i.e. 11 followed by flea allergy dermatitis and contact allergy i.e. 3 each and only 1 case was of drug induced allergy (Table 4).

Table 4. Incidence of Different Type of Allergies.

Type of Allergic Dermatitis	Number of positive case
Atopic Dermatitis	11(61.11)
Flea allergy	03(16.66)
Contact allergy	03(16.66)
Drug induced allergy	01(5.55)
Total	18

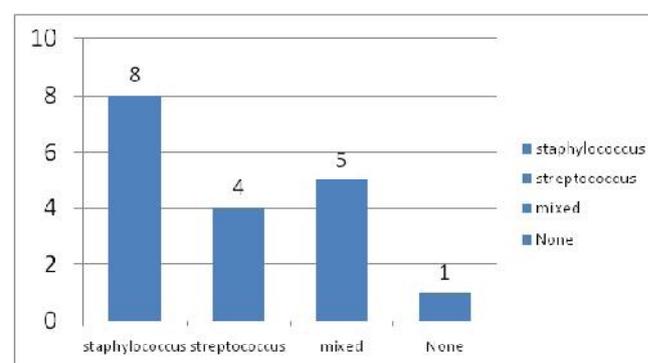


Figure 4. Presence of Secondary Bacterial Infection in Canine Allergic Dermatitis.

Secondary bacterial infection

In the present, study we found that *Staphylococcus* bacteria were present as secondary bacterial infection in maximum no. of cases (8) followed by mixed bacterial infection (5) followed by streptococcus (4) and no bacterial infection in 1 dog (Figure 4).



Overall prevalence

Overall prevalence of canine dermatitis during the study period was found to be 20.96% and these findings are in general agreement with the findings of Schwartzman and Orkin (1962), Ihrke and Franti (1985) and Grant (1986). The prevalence of canine allergic dermatitis during the study period was found to be 9.23% whereas Scott and Paradis (1990) recorded 23.3% prevalence in their study.

Prevalence was maximum in the month of July, 2011 (27.77%) and minimum (0%) during winters of 2010. These findings are in agreement with that of Aujla (1993) and Sharma *et al.* (2008a). The highest prevalence during July might be due to hot and humid environment condition which may cause stress to body favouring the occurrence of disease (Upadhyay *et al.*, 2005).

Age wise prevalence of allergic dermatitis revealed that the dogs between 2-4 years of age were most susceptible (55.55%) followed by dogs of one to two years of age (22.22%). Our finding are in agreement with Rosser (1993) however some researchers like Harvey (1993), Griffin and DeBoer (2001) deny age predilection. Patil *et al.* (1999) and Sharma *et al.* (2008b) reported 46 and 37.93% incidence of dermatitis 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).

Sex wise prevalence of allergic dermatitis revealed highest occurrence in males (83.33%) than in females (16.66%). Reports of sex predisposition in canine allergic dermatitis are inconsistent. Some studies reported predisposition for male, female or for neither sex. Our findings are in agreement with Mueller *et al* (2001) and Shakir *et al.* (1996).

Least incidence was seen in dogs receiving non-vegetarian plus dog food. The reason for such observation can be attributed to the fact that the vegetarian meal is low in protein and essential minerals where as dogs fed with non-vegetarian diet and dog food are rich in these .

Atopic dermatitis showed highest occurrence among all allergic dermatitis (61.11%) followed by flea allergy (16.66%) and contact allergy (16.66%). Our study was in agreement with the study of Lund *et al.* (1999) and Sischo *et al.* (1989).

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