

DERMATOLOGICAL DISORDERS IN CANINES - A DETAILED EPIDEMIOLOGICAL STUDY

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Received: 21.03.2016; Accepted: 03.06.2016

ABSTRACT

A study was undertaken to determine the prevalence of different dermatological conditions in dogs during the period from July 2010 to June 2015. Out of 22,193 dog cases reported to the Teaching Veterinary Clinical Complex of this university, 4,736 (21.34%) animals had different dermatological disorders. Sarcoptic mange was the most common dermatological disorder followed by pruritus due to tick infestation, pyoderma and allergic eczema, respectively in decreasing order. Most of the skin disorders were observed during rainy season (30.02%) followed by summer season (24.24%). The dogs of less than one year of age were the most affected (40.90%). Of the dogs with skin disorders, 63.22% were males and 36.78% were females. Epidemiological analysis of the dermatological disorder data revealed an increasing trend of skin disorders in dogs during the study period which may probably either be due to more awareness among dog owners about the health of their pets or increasing pet population or the environment becoming more favourable for the various etiological agents of skin disorders.

Key words: Dermatological disorders, dogs, Haryana

Dermatological problems are one of the most commonly reported and hardest to resolve problems encountered by veterinarians in small animal medicine (Scott *et al.*, 2001). Pet owners always desire to have pets with healthy fur. Dogs are commonly infested with many ecto-parasites making them miserable due to constant scratching and severe itching. Several studies from India and abroad have indicated that skin affections make up a significant proportion of the small animal caseload (Hill *et al.*, 2006; Kumar *et al.*, 2006; Sarma *et al.*, 2013). The purpose of this study was to document the prevalence of different skin diseases in dogs in this northern part of the country and to look for epidemiological factors associated with their occurrence.

MATERIALS AND METHODS

The present study was carried out in the Teaching Veterinary Clinical Complex (TVCC) of the university during the period from July 2010 to June 2015. Dogs presented to the TVCC with clinical signs suggestive of dermatological problem were included in the study. During the visit, information such as history, clinical signs, age, sex etc. were recorded. The data so collected was analysed to determine epidemiological pattern of various skin disorders in dogs. Skin scrapings from the dogs suspected for mite infestation were collected and examined by the method of Soulsby (1982). Deep scrapings were taken from the peripheral areas of active lesions. The scrapings

were also collected from the 'recently rubbed' or 'appeared raw' lesions. Examination of skin scrapings for the mite was done by direct method or by 10% potassium hydroxide solution.

RESULTS AND DISCUSSION

A total of 22,193 canine cases were presented to the TVCC, Hisar during five year study period. Of these, 4,736 (21.34%) dogs had different dermatological disorders. Year wise distribution of cases showed an increasing trend of skin affections with maximum cases (1,343) in the year 2014-15. Sarma *et al.* (2013) reported only 5.6% cases affected with skin diseases during a study period of 3 months whereas Shyma and Vijayakumar (2012) reported 12% dermatological problems in one year in dogs. Prevalence of skin disorders ranging from 15-25% in dogs has earlier been reported (Scott *et al.*, 2001; Hill *et al.*, 2006). Increasing trend of dermatological disorders observed in this study may probably be due to updated knowledge in diagnosis of skin diseases, increasing

Table 1. Year-wise number of cases of skin disorders in dogs presented at TVCC from July 2010 to June 2015

Year	Total dog cases presented to the TVCC	No. of cases of skin disorders (%)
2010-11	3346	716 (21.40)
2011-12	3920	759 (19.36)
2012-13	4541	895 (19.71)
2013-14	4533	1023 (22.57)
2014-15	5853	1343 (22.94)
Total	22193	4736 (21.34)

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Table 2. Month-wise number of cases of skin diseases in dogs diagnosed at TVCC, LUVAS from July 2010 to June 2015

Skin disorder	Age of dogs												Total
	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	
Sarcoptic mange	118	118	123	67	58	44	51	40	63	107	113	132	1034
Demodectic mange	37	38	29	18	15	15	15	14	21	23	28	29	282
Allergy/Eczema	80	52	55	40	37	22	24	26	35	59	64	54	548
Dermatomycosis	44	49	45	44	38	26	30	27	24	35	34	44	440
Pyoderma	111	111	93	73	33	28	41	28	48	57	74	95	792
Pruritus due to tick infestation	119	109	125	91	47	23	4	16	71	87	131	150	973
Pediculosis	4	3	2	6	10	19	18	12	16	16	7	7	120
Flea allergy dermatitis	22	16	26	17	6	7	8	6	20	20	30	20	198
Others*	35	37	41	23	22	12	9	16	21	41	37	55	349
Total (%)	570 (30.3)	533 (30.4)	539 (29.3)	379 (22.0)	266 (17.4)	196 (12.3)	200 (12.6)	185 (10.7)	319 (14.7)	445 (18.9)	518 (25.3)	586 (29.4)	4736 (21.3)
Total canine cases	1879	1753	1838	1725	1530	1587	1587	1735	2169	2351	2049	1990	22193

*Includes tumors, warts and dermatitis due to nutritional or hormonal reasons. Figure in parenthesis indicate percentage

population of pets, increased awareness among pet owners or due to change in climate conditions.

In the present study, 1034 dogs were affected with sarcoptic mange followed by pruritus due to tick infestation (973). Pediculosis was the least recorded condition with only 120 cases during five year study period. Kumar *et al.* (2006) recorded ticks infestation as a major dermatological problem followed by sarcoptic mange and lice infestation in dogs. Demodectic mange infestation was found to affect only 5.95% of affected cases; this finding is in close association with that of Kumar *et al.* (2006). Shyma and Vijayakumar (2012) recorded 51.92% and Shirk (1983) reported 21.2% cases of canine demodiosis. The prevalence of skin disorders appears to be region specific and dependent upon geo-climatic conditions.

Month-wise categorization of different skin affections (Table 2) showed maximum number of skin cases (30.4%) in the month of August followed by July

(30.3%). Least number of cases (10.7%) was recorded in the month of February. Maximum cases of sarcoptic mange (132) and pruritus due to tick infestation (150) were in the month of June, whereas demodectic mange and pyoderma cases were more in the month of August. Flea allergy dermatitis and eczema cases in dogs in this study were maximum in the month of July. The findings of present study are in close agreement with the report of Kumar *et al.* (2006). Different skin affections showed a positive correlation with monthly ambient temperature.

Broadly, an year was divided into four seasons namely winter (January to March), summer (April to June), rainy (July to September) and autumn (October-December) in this part of the country. Although, skin affections were recorded throughout the year but cases were more in rainy season followed by summer, autumn and then winter (Table 3). Cases of sarcoptic mange, demodectic mange and pyoderma were maximum in rainy

Table 3. Seasonal pattern of skin diseases in dogs presented at TVCC from July 2010 to June 2015

Skin disorder	Season				Total (%)
	Rainy (July-Sept.)	Autumn (Oct.-Dec.)	Winter (Jan.-March)	Summer (April-June)	
Sarcoptic mange	359	169	154	352	1034
Demodectic mange	104	48	50	80	282
Allergy/Eczema	187	99	85	177	548
Dermatomycosis	138	108	81	113	440
Pyoderma	315	134	117	226	792
Pruritis due to tick infestation	353	161	91	368	973
Pediculosis	9	35	46	30	120
Flea allergy dermatitis	64	30	34	70	198
Others*	113	57	46	133	349
Total positive cases (%)	1642 (30.02)	841 (17.37)	704(12.82)	1549 (24.24)	4736 (21.34)
Total canine cases	5470 (24.64)	4842 (21.82)	5491 (24.74)	6390 (28.80)	22193

*Includes tumors, warts and dermatitis due to nutritional or hormonal reasons. Figures in parentheses indicate percentage

Table 4. Age-wise number of cases of skin diseases in dogs (July 2010 to June 2015)

Skin disorder	Age of dogs				Total
	Below 1 year	1-2 years	2-4 years	Above 4 years	
Sarcoptic mange	461 (44.6)	267 (25.8)	159 (15.4)	147 (14.2)	1034
Demodectic mange	86 (30.5)	93 (33.0)	37 (13.1)	66 (23.4)	282
Allergy/Eczema	168 (30.7)	170 (31.0)	118 (21.5)	92 (16.8)	548
Dermatomycosis	179 (40.7)	122 (27.7)	78 (17.7)	61 (13.9)	440
Pyoderma	395 (49.9)	176 (22.2)	115 (14.5)	106 (13.4)	792
Pruritis due to tick infestation	374 (38.4)	290 (29.8)	192 (19.7)	117 (12.1)	973
Pediculosis	88 (73.3)	21 (17.5)	04 (3.4)	07 (5.8)	120
Flea allergy dermatitis	50 (25.3)	66 (33.3)	39 (19.7)	43 (21.7)	198
Others*	136 (39.0)	105 (30.0)	47 (13.5)	61 (17.5)	349
Total (%)	1937 (40.90)	1310 (27.66)	789 (16.66)	700 (14.78)	4736

*Includes tumors, warts and dermatitis due to nutritional or hormonal reasons; Figures in parentheses indicate percentage

season whereas the cases of pediculosis were more during winter season. In summer season, maximum cases were of pruritus and flea allergy dermatitis. Similar to the observations of the present study, Dimri and Sharma (2004) reported maximum cases of skin diseases during hot and humid months of the year.

Highest occurrence of skin disorders was observed in dogs below one year of age (Table 4) followed by dogs of 1-2 years of age. Diseases such as dermatomycosis, eczema, sarcoptic mange and tick infestation were more in dogs of less than one year of age where as flea allergy and demodectic mange was more in dogs of 1-2 years of age. Among the skin disorders-affected dogs, maximum number was of males (63.22%). The percentage of sarcoptic mange, demodectic mange, eczema and pruritus due to tick infestation was 63.8%, 62.4%, 65.7% and 62.3%, respectively in male dogs (Table 5). Our findings are consistent with the findings of different workers (Chakrabarti and Misra, 1979; Jani *et al.*, 2004; Kumar *et al.*, 2006). However, sex susceptibility need to be critically analyzed with the fact that people in the particular region prefer male dogs over females.

Table 5. Sex wise number of cases of skin diseases in dogs (July 2010 to June 2015)

Skin disorder	Sex		Total
	Male	Female	
Sarcoptic mange	660 (63.8)	374 (36.2)	1034
Demodectic mange	176 (62.4)	106 (37.6)	282
Allergy/Eczema	360 (65.7)	188 (34.3)	548
Dermatomycosis	283 (64.3)	157 (35.7)	440
Pyoderma	508 (64.1)	284 (35.9)	792
Pruritis due to tick infestation	606 (62.3)	367 (37.7)	973
Pediculosis	81 (67.5)	39 (32.5)	120
Flea allergy dermatitis	111 (56.1)	87 (43.9)	198
Others*	209 (59.9)	140 (40.1)	349
Total (%)	2994 (63.22)	1742 (36.78)	4736

*Includes tumors, warts and dermatitis due to nutritional or hormonal reasons. Figures in parentheses indicate percentage

The results revealed the dermatological disorders are prevalent in dog population in this region. There is a need for comprehensive planning and formulation of strategies for the control of skin affections in dogs. Further studies are required to understand the nature and resistance pattern of different causative agents against commonly available antimycotic drugs.

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