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## Prevalence studies on canine pyoderma

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### Abstract

On screening of 1392 dogs with dermatological problems during the period from December 2020 to September 2021, Canine pyoderma was recorded in 153 cases with prevalence of 11%. From these dogs, 50 cases were selected for therapeutic regimen and were subjected for all the clinical diagnostic procedures. Canine Pyoderma was more prevalent in dogs aged between 2-4 years (34%) and less among 8 to 10 years higher occurrence in males (68%) than females (32%) was observed. The breed-wise prevalence of Canine Pyoderma in the present study was found to be higher in Labrador retriever (38%), followed by Pomeranian (28%), German shepherd (8%), Dachshund (8%), Doberman (4%), Great Dane (4%), Boxer (2%), Dalmatian (2%) and lowest in Spitz (2%).

**Keywords:** Canine pyoderma, age, breed, gender and prevalence

### Introduction

Of the various infectious diseases skin diseases are significant and have an impact on the health of the dog. It also has negative affect on cosmetic appearance of the dog. Pyoderma is one of the most common causes of dermatitis with worldwide occurrence in small animal practice (Scott *et al.* 2001 and Patel, 2006) [15, 10]. Dogs are more prone to pyoderma due to the unique characteristic of their skin consisting of a thin stratum corneum, lack of lipid plug in the hair follicles and high skin pH. This unique characteristic poses a risk for bacterial invasion, Subsequent colonization, and overgrowth. This may lead to superficial bacterial folliculitis (Devriese *et al.* 2005 and Takashi *et al.* 2007) [4, 14]. Pyoderma is of great importance due to its effects on the animal such as distress, irritation, and offensive odour besides being a potential source of zoonotic diseases (Parish and Schwartzman, 1993) [9].

### Material and Methods

Dogs presented with different dermatology affections at Veterinary Clinical Complex, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, during the period of December 2020 to September 2021 were considered for the study.

All these dogs were subjected to detail clinical examination followed by routine haematology, biochemistry and skin scraping, bacterial isolation and *in vitro* antibiotic sensitivity test.

A sterile dry cotton swab was used to collect samples from moist lesions. Various clinical samples such as deep skin scrapings, hair, and/or secretions from the infected area were collected. Acetate tape impressions were collected from dry lesions. Glass slide Impression smears were collected from the moist erythematic, papules, and pustular lesions. Whole Blood was collected and subjected to haematological examination.

### Results and Discussion

During the period of study, a total of 1392 dogs which showed classical, clinical signs of dermatological disease. Among them, a total of 153 (11%) were diagnosed for Canine Pyoderma of various etiology. The common bacteria isolated was *Staphylococcus intermedius*, *Staphylococcus aureus*, *Staphylococcus epidermidis*. Mixed bacterial infection were *Staphylococcus* with *Klebsiella*, *Pseudomonas* and *E. coli*.

### Age wise prevalence

The age-wise prevalence of Pyoderma in dogs is shown in table 1 and fig 1. The highest occurrence of Pyoderma was recorded in dogs aged between 2 to 4 years (34%), followed by up to 2 years (32%), 4 to 6 years (18%), 6 to 8 years (12%), respectively with the lowest occurrence in dogs aged between 8 to 10 years (4%).

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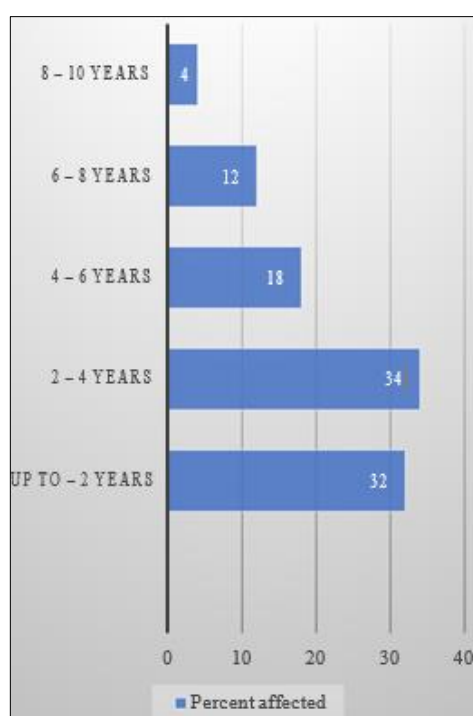
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The findings of present study were almost in concurrence with those of Bloom and Rosser (2001) <sup>[1]</sup> and Shyma and Vijayakumar (2011b) <sup>[16]</sup> and Veeranki (2015) <sup>[18]</sup> who recorded similar observations. In contrast, Curtseit *et al.* (2009) <sup>[2]</sup> recorded higher occurrence of pyoderma in dogs aged between 9-14 years, while Sarma *et al.* (2013) <sup>[12]</sup> documented higher occurrence of dermatological disorders in dogs up to 1 year. However, Koshnegah *et al.* (2013) <sup>[6]</sup> opined that there was no age predilection for dermatological diseases among dogs. While, Khinchi *et al.* (2019) <sup>[5]</sup> documented higher occurrence of pyoderma in dogs aged between 1-3 years age group.

**Table 1:** Age wise prevalence of Canine Pyoderma (N = 50)

S. No	Age groups	Number affected	Percentage%
1	Up to – 2 years	16	32
2	2 – 4 years	17	34
3	4 – 6 years	9	18
4	6 – 8 years	6	12
5	8 – 10 years	2	4
Total		50	100.00



**Fig 1:** Age wise prevalence of canine pyoderma

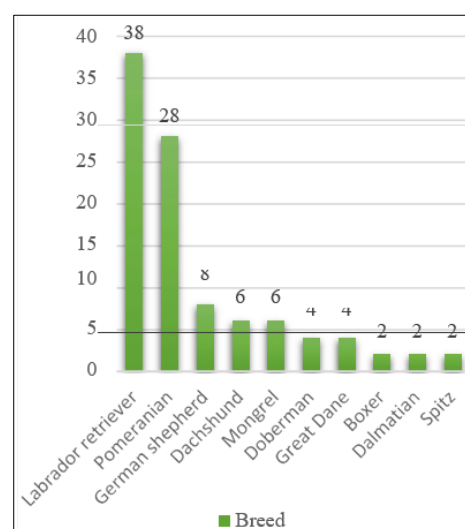
### Breed wise prevalence

High occurrence of Canine Pyoderma was among Labrador (38%), followed by Pomeranian (28%), German shepherd (8%), Dachshund and Mongrel breed (6% each), Doberman and Great Dane (4% each), Boxer, Dalmatian and Spitz (2% each), respectively (table 2 and fig. 2). The breed predilection to dermatological problems varied with the breed composition of canine population in a particular region and popularity of individual breeds (Pocta and Svoboda, 2007) <sup>[11]</sup>. However, in a survey of dermatological diseases, 82.8% of dermatological diseases were observed in pure breeds (183/221), 16.28% (36/221) in crossbreeds and 0.90% (2/221) in Mongrels (Koshnegah *et al.* 2013) <sup>[6]</sup> and they opined that Spitz, Terriers and German shepherds were at increased risk for dermatological diseases, while large breed and mixed breed dogs were less prone and the incidence of dermatological disorders higher in spitz (26.92%) followed by Labrador

(23.08%), Pomeranian (13.46%) and Mongrel %) (Sarma *et al.* 2013) <sup>[12]</sup>. Khinchi *et al.* (2019) <sup>[5]</sup> revealed that higher cases of pyoderma were of Labrador (28.12%) followed by German shepherd (21.87%), Pug (18.75%), Pomeranian (15.62%), Beagle (9.37%) and lowest prevalence rate in St. Bernard (3.12%) and Doberman (3.12%).

**Table 2:** Breed wise prevalence of Canine Pyoderma (N=50)

S. No	Name of the breed	No. of dogs affected	Percentage
1	Labrador retriever	19	38
2	Pomeranian	14	28
3	German shepherd	4	8
4	Dachshund	3	6
5	Mongrel	3	6
6	Doberman	2	4
7	Great Dane	2	4
8	Boxer	1	2
9	Dalmatian	1	2
10	Spitz	1	2
Total		50	100



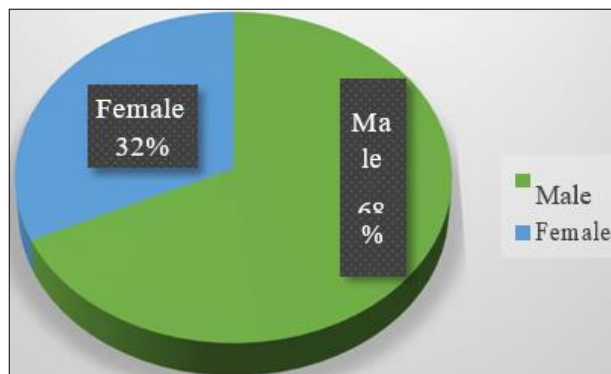
**Fig 2:** Breed wise prevalence of Canine Pyoderma (n=50)

### Gender wise prevalence

Out of 50 dogs that were diagnosed for Canine Pyoderma, 34 (68%) were male and 16 (32%) were female, which showed more occurrence in male dogs (table 3 and fig. 3). Similarly, findings were in accordance with Curtseit *et al.* (2009) <sup>[2]</sup> and Sarma *et al.* (2013) <sup>[12]</sup> were reported higher predisposition of male dogs to pyoderma than the female dogs. In contrary, Shyma and Vijayakumar (2011b) <sup>[16]</sup> and Singh *et al.* (2012) <sup>[12]</sup> recorded higher occurrence in female dogs which could be attributed to various stress factors such as cyclicity, whelping and lactation, which lower the immune status of these animals making them more prone to these infections. However, Koshnegah *et al.* (2013) <sup>[6]</sup> and Lodh and Das (2013) <sup>[7]</sup> could not record significant gender predilection for developing pyoderma with the exception of vulvar skin fold pyoderma in females or testicular sertoli cell tumour in males. Khinchi *et al.* (2019) <sup>[5]</sup> reported higher predisposition of male dogs to pyoderma than the female dogs.

**Table 3:** Gender wise prevalence of Canine Pyoderma (N = 50)

Gender	Number affected	Percentage
Male	34	68
Female	16	32
Total	50	100



**Fig 3:** Gender wise prevalence of canine pyoderma (N = 50)

## Conclusion

From the present study it may be concluded that the prevalence of canine pyoderma was highest among 2-4 years age group, male dogs and among Labrador retriever breed.

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