

STUDY ON THE INCIDENCE OF CANINE PYODERMA IN NAGPUR

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Canine pyoderma significantly impacts affected animals, causing discomfort and a notable decline in their overall quality of life. The study was carried out in the Department of Veterinary Clinical Medicine, Ethics & Jurisprudence, Nagpur Veterinary College, Nagpur from June 2023 to December 2023. The comparative therapeutic efficacy of systemic, topical and mixed therapy was evaluated. The primary diagnosis of canine pyoderma was done using skin cytology and further confirmed by bacterial culture. Out of total 11657 dogs examined, 1287 (11.04%) dogs that were found positive for skin diseases. Out of these, 223 (17.32%) dogs were found affected with pyoderma. The highest incidence of canine pyoderma was observed in dogs aged between 1 to 2 years. Males were found most susceptible. Labrador Retriever was found predominantly affected. The common clinical signs recorded were erythema, alopecia, pruritus, papules, and pustules. *spp.* was found to be the most common bacteria (96.77%), followed by *E.coli* (3.22%). Clindamycin and doxycycline demonstrated the highest level of antibiotic sensitivity when tested on *Staphylococci* isolates (n=30), while enrofloxacin demonstrated the highest level when tested on *E.Coli* isolates (n=1).

Keywords: Dog, Incidence, Pyoderma.

Pyoderma can be defined as a pyogenic or pus-producing bacterial infection of the skin. Pyoderma, a prevalent and intricate dermatological problem in dogs, instigates considerable concern for both pet owners and veterinary specialists due to its frequency and the challenges. Successfully addressing canine pyoderma necessitates a comprehensive understanding of the intricate interplay between its underlying cause, diagnosis process, and therapeutic strategies. Clinically characterised by primary skin lesions including papules, and pustules, followed by secondary skin lesions crusting, epidermal collarettes, alopecia, scaling, erythema, pruritus, lichenification and hyperpigmentation (Kshama and Yathiraj, 2014). Under present investigation, incidence of Pyoderma in dogs was in Nagpur city,

Materials and Methods

All the dogs presented to Clinical Complex, Veterinary College, Nagpur were

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screened for pyoderma during June 2023 to December 2023. After taking a detailed history of animals regarding sex, age, breed, location of lesions, and initial symptoms, various parameters like rectal temperature, body condition, and colour of the visible mucous membrane were recorded. The skin was thoroughly examined, History regarding the vaccination schedule, deworming, ectoparasite control, and dietary change was also recorded etc.

Results and Discussion

During the study period (June 2023 to December 2023), a total of 11657 dogs were registered at the were registered at the Veterinary Clinical Complex, Nagpur Veterinary College, Nagpur. Out of these, 1287 (11.04%) dogs were positive for skin diseases. Among dogs affected with various skin diseases, 223 (17.32%), dogs were found affected with pyoderma.

In the age-wise incidence, the highest incidence of pyoderma was recorded in dogs aged between 1 to 2 years (33.33%) followed by up to 1 year (30%), 2 to 4 years (20%), 4

to 6 years (3.33%) and 6 to 8 years (6.6%). The dogs aged in between age 8-10 years were least affected. Similar findings were also observed by Naveena *et al.*, 2023 and Thapa and Sarkar, 2021 who recorded the highest incidence of pyoderma in the dogs aged between 1 to 2 years followed by dogs aged up to 1 year, similar findings were observed by Janardhan *et al.*, 2022. There were no age predilections for dermatological diseases in dogs. While Ankita and Gandge, 2018 reported the highest incidence of pyoderma in the age group 1-3 years. Infection in young dogs may be caused by

inadequate epithelial development and a lack of specialized immunity.

The sex-wise incidence data indicated that the occurrence of canine pyoderma was higher in males as compared to female dogs. Similar findings were observed by Janardhan *et al.*, 2022 and Naveena, *et al.*, 2022, Gopal *et al.*, 2023. In the Breed-wise incidence, the incidence was found to be higher in Labrador 82 (36.77 %) followed by the Non-descriptive breed 30 (23.33%), Doberman 22 (13.4%), German Shepherd 22(9.8%), golden Retriever 16 (7.17%), Pug 7(3.13%), Pomeranian 6 (2.7%), and husky 8(3.6%).

Table 1: SEX-WISE INCIDENCE OF PYODERMA IN DOGS (n= 223)

Gender	Affected	Percentage
Male	119	53.36%
Female	104	46.63%
Total	223	100.00

In the present study Clinical examination of 223 dogs with pyoderma revealed symptoms of erythema (62.7%), alopecia (56.5%), pruritus (56.50%), papules (63.22%),

crusts(30.04 %), pustules(56.77%), epidermal collarettes (36.77%), scales (30.04%), moth-eaten appearance (21%) and erosions (16.59%), hyperpigmentation (23.13%).

Table 2: BREED-WISE INCIDENCE OF CANINE PYODERMA (n = 223)

Sr.No.	Name of breed	Number of dogs affected	Percentage
1.	Labrador Retriever	82	36.77%
2.	Non-descript	52	23.3%
3.	Doberman	30	13.4%
4.	German shepherd	22	9.8%
5.	Golden retriever	16	7.17%
6.	Pug	7	3.13%
7.	Pomeranian	6	2.7%
8.	Husky	8	3.6%
Total		223	100.00%

Among the clinical signs erythema, alopecia, pruritus, papules and pustules were common, similarly reported by Rafatpanah *et al.*, 2020 and Kamel *et al.*, (2021). These symptoms were attributed to the bacterial proliferation on the skin and the subsequent release of bacterial toxins and enzymes resulting in inflammation and pruritus. Skin-derived itching originates from the skin and is caused by inflammation, dryness, or damage to the skin Other symptoms like erythema,

exudation, scaling, alopecia and offensive odour might be due to the release of chemical mediators such as serotonin, prostaglandins, peptides and leukotrienes at the site of inflammation. Folliculitis occurs as follicle growth shifts towards the telogen phase after the occurrence of inflammation, in and around follicles that results in diffuse or patchy alopecia.

In the present study, it was noticed

that the dorsum 111 (49.77%) was the most affected site. The other regions affected were the abdominal region in 97 dogs(43.49 %), head in 70 dogs(31.39%), hind limbs in 67

dogs(30.04%), forelimbs in 59 dogs (26.45%), thorax in 45 dogs(20%), groin in 45 dogs(20.1%), axilla in 37 dogs(16.59%), neck in 37 dogs(16.59%) and tail in (6.7%).

Table 3: AGE-WISE INCIDENCE OF PYODERMA IN DOGS (n= 223)

S.No	Age Groups	Number affected	Percentage
1	Upto 1 year	70	30%
2	>1 –2 years	74	33.33%
3	>2 -4 years	45	20%
4	>4 -6 years	15	6.6%
5	>6 -8 years	15	6.6%
6	>8 -10 years	4	3.33%
Total		223	100.00

reported that the head, face, pinna and trunk were the most affected lesion regions that were mostly affected. Skin folds at the groin and other areas also increase humidity and temperature promoting bacterial infection, this folds also trap dust and foreign bodies, which may be involved in the pathogenesis of

the lesions Frequent occurrence of lesions in the above regions could be attributed to physical factors (humidity and warmth), anatomical variations (skin folds and areas of skin rich in sebaceous/ceruminous glands) and characteristics of skin or/and associated with trauma on dorsal midline and limbs.

Table 4: SYMPTOMATOLOGICAL INCIDENCE OF CANINE PYODERMA IN DOGS (n =223)

Clinical signs	Frequency	Percentage
Papule	141	63.22%
Pustule	126	56.77%
Nodules	22	9.8%
Erythema	140	62.7%
Alopecia	126	56.5%
Scales	74	33.18%
Crust	67	30.04%
Epidermal collarettes	82	36.77%
Erosions	37	16.59%
hyper pigmentation	52	23.31%
moth eaten appearance	47	21.0%
pruritus	126	56.50%

Frequent occurrence of lesions in the above regions could be attributed to physical factors (humidity and warmth), anatomical

variations (skin folds and areas of skin rich in sebaceous/glands)and characteristics of skin or/and associated with trauma

Table 5: INCIDENCE OF LOCALISATION OF SKIN LESIONS IN DOGS AFFECTED WITH PYODERMA

S.No	Body region	Number affected	Percentage
1	Head	70	31.39%
2	Neck	37	16.59%

3	Fore limb	59	26.45%
4	Hind limb	67	30.04%
5	Dorsum	111	49.77%
6	Thorax	45	20%
7	Abdomen	97	43.49%
8	Tail	15	6.7%
9	Axilla	37	16.59%
10	Groin	45	20.17%
11	Foot	22	9.8%
12	Generalized	30	13.4%

Conclusion

The incidence of pyoderma at the VCC from during June 2023 to December 2023 was 17.32 per cent. More male dogs (53.36%) than female dogs (46.63%) had pyoderma. Dogs between the ages of 1-2 years (33.33.22%) years had the highest incidence of pyoderma. The breed that was most frequently affected (36.58%) was the Labrador Retriever breed. Bacterial infection was the most prevalent cause of pyoderma.

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