

## **NON-DESCRIPT AND LABRADOR RETRIEVER BREEDS MOST AFFECTED BY OTITIS EXTERNA IN DOGS**

**<sup>1</sup>Chaudhary, M. and <sup>2</sup>Mirakhur, K. K**

<sup>1</sup>Department of Veterinary Medicine, Veterinary College, Hebbal, Bangaluru -24

<sup>2</sup>Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar – 582104 India

**Abstract:** Otitis externa is a common inflammatory condition affecting dogs' external ear canal, caused by various factors such as bacteria, yeast, fungi, and parasites. This study aimed to determine the prevalence of Otitis externa in dogs based on age, breed, gender, ear type, and season. A retrospective and current study was conducted in Veterinary College, Hebbal, Bengaluru. Dogs presented with clinical signs suggestive of Otitis externa were considered for the study. The prevalence of Otitis externa was found to be 1.33% and 52.47% among all dogs presented and dogs with ear diseases, respectively. The study showed that males were more affected than females, and drop type ear dogs were more susceptible than prick and intermediate ear types. The rainy season had the highest prevalence of Otitis externa, followed by winter and summer, and all age groups were affected. Non-descript and Labrador Retriever breeds had the highest prevalence of Otitis externa in dogs. In conclusion, this study provides essential information to veterinarians and dog owners about the incidence and risk factors associated with Otitis externa. Identifying the predisposing factors can assist in early identification and management of the disease and prevent its recurrence.

**Keywords:** Otitis Externa, Dogs, Prevalence, Age, Breed, Gender, Ear Type, Season

### **Introduction:**

Otitis externa is a common inflammatory condition of the ear that affects dogs of all ages, breeds, and sexes. The prevalence of the disease varies based on the environment, geographic location, and socio-economic factors. Otitis externa is characterized by inflammation of the external ear canal, which may be acute or chronic and is caused by various aetiologies, including bacteria, yeast, fungi, parasites or a combination of these. Environmental conditions such as humidity and temperature may play a role in predisposition to ear infections. An understanding of the epidemiological factors associated with Otitis externa can help in early diagnosis and management.

This study aimed to determine the prevalence of Otitis externa in dogs presented to a veterinary hospital and the predisposing factors associated with the disease. We investigated the influence of age, breed, gender, ear type, and season on the prevalence of the disease. The study provides useful information for veterinarians and dog owners in managing and preventing Otitis externa in dogs.

## MATERIALS AND METHODS

Dogs irrespective of age, breed and gender presented to Veterinary Hospital, Veterinary College, Hebbal, Bengaluru during study period December 2010 to November 2022 (Retrospective study period: 1.12.2022 to 31.05.2022 & Current study period: 01.06.2022 to 30.11.2022) with clinical signs suggestive of Otitis externa were considered for the study. Appropriate animal data was gathered and the prevalence was calculated. Dogs were categorised into the following age groups like <1 year, 1 to 4 years, 4 to 7 years, 7 to 10 years and > 10 years as described by Khan *et al.*, (2019). Ear types were categorised into drop type (pendulous), intermediate type (semierect) and prick type (erect) as described by Masuda *et al.*, (2000). Similarly Season was categorised into Summer (March-June), Rainy (July-October) and Winter (November-February) as described by Choudhury, (2014).

## RESULTS & DISCUSSION

A total of 1008 dogs of different age, breed and gender were diagnosed for Otitis externa based on the history and clinical signs. The prevalence of Otitis externa was found to be 1.33 per cent among all the dogs and 52.47 per cent among the dogs with different ear diseases. Similarly, Pradhan (2016) and Barua *et al* (2021) have reported prevalence of 0.62 per cent and 2.11 per cent respectively (Table 1). Otitis externa varies with geographical location also due to the fact that owners are unable recognise the mild cases during the initial period.

All the age groups of dogs are affected with the Otitis externa in the current study. Dogs less than 1 year, 1 to 4, 4 to 7, 7 to 10 and >10 year age have recorded the prevalence of 13.89%, 30.95%, 19.05%, 27.18% and 8.93% respectively (Table 2). Age of the dog does not have any significant influence on the prevalence of Otitis externa as all the age groups of dogs have been affected in the study similarly; Zur et al. (2011) have reported that occurrence of Otitis cannot be predicted by age group of the dogs.

The occurrence of Otitis externa among Non-descript, Labrador Retriever, Shih-Tzu, Pug, German Shepherd, Golden Retriever, Pomeranian, Cocker Spaniel, Dachshund, Bull dog, Siberian Husky, Rottweiler and Lhasa apso in the current study indicated 20.03%, 18.35%, 11.81%, 10.62%, 10.32%, 8.23%, 5.06%, 4.27%, 3.47%, 2.28%, 2.08%, 1.89% and 1.59%, respectively (Table 3). The highest prevalence of Otitis externa among Non-descript dog breeds may be because of the are outnumbered population compared to other breeds of dogs or erect ears which are exposed to environmental factors (Mhatre., 2005 & Kashyap., 2017). The proportion of Male to female dogs affected for Otitis externa in the present study was 57.34% and 42.66% respectively (Table 4). Similar observations were made by Chaudhary and Mirakhur (2002). Male dog susceptibility for Otitis externa could be because male sex hormones tend to stimulate sebum production, which appears to be a risk factor for the precipitation of the infection on the contrary oestrogen in females, elicits the opposite response (Kumar et al., 2014).

The occurrence of Otitis externa among drop, intermediate and prick type of ears was 47.72%, 24.21% and 28.07%, respectively (Table 5). Several researchers have reported drop [pendulous] ear type dogs are more susceptible to Otitis externa as compared to prick [erect] and intermediate [semi erect] ear type (Bernardo et al., 1998; Cunha et al., 2003; Lakshmi and Tirumala Rao., 2013). This higher susceptibility is attributed to anatomical conformation of the ear (shape of pinna & concave aspect of the pinna) as well as the available quantity of hair within the canal and the amount of glandular material within lumen of ear canal (Hayes et al., 1987; Sharma and Rhoades 1975).

Summer, Rainy and Winter season influence on the occurrence of otitis externa was in the current study was 25.30%, 41.87% and 32.83% respectively. Grono(1969), Baxter and Lawler (1972) did not observe any

correlation between season and incidence of Otitis externa. However, Kim and Choi (1999) and Dana (2005) have reported the higher incidence of Otitis externa in rainy season. The higher prevalence of Otitis externa in rainy season might be due to the increase in the humidity, temperature and moisture intern altering the microenvironment in the ear canal (Chaudhury and Mirakhur, 2002).

**Table 1. Prevalence of Otitis externa in dogs.**

Prevalence	Retrospective study (n=56965)	Current study (n=19196)	Total cases (n=76161)
Ear diseases	720	193	913
Otitis externa	733	275	1008 (1.33%)
	1453	468	1921 (52.47%)
P value	0.084 <sup>ns</sup> , Chi-square 2.97		

**Table 2. Age-wise distribution of Prevalence of Otitis externa.**

Age group	Retrospective study (n=733)	Current study (n=275)	Total cases(n=1008)
< 1 year	95 (12.96%)	45 (16.36%)	140 (13.89%)
1-4 year	230 (31.38%)	82 (29.82%)	312 (30.95%)
4-7 year	135 (18.42%)	57 (20.73%)	192 (19.05%)
7-10 year	208 (28.38%)	66 (24.00%)	274 (27.18%)
> 10 years	65 (8.86%)	25 (9.09%)	90 (8.93%)
P value	0.874262 <sup>ns</sup> Chi-square 3.8051		

**Table 3. Breed-wise distribution of Prevalence of Otitis externa.**

Breed	Retrospective study (n=733)	Current study (n=275)	Total cases (n=1008)
Non-descript	147 (20.05%)	55 (20.00%)	202 (20.03%)
Labrador Retriever	135 (18.42%)	50 (18.18%)	185 (18.35%)
Shih-Tzu	87 (11.87%)	32 (11.64%)	119 (11.81%)
Pug	78 (10.64%)	29 (10.55%)	107 (10.62%)
German Shepherd	76 (10.37%)	28 (10.18%)	104 (10.32%)
Golden Retriever	60 (8.19%)	23 (8.36%)	83 (8.23%)
Pomeranian	37 (5.05%)	14 (5.09%)	51 (5.06%)
Cocker Spaniels	31 (4.23%)	12 (4.36%)	43 (4.27%)
Dachshund	25 (3.41%)	10 (3.64%)	35 (3.47%)
Bull dog	17 (2.32%)	6 (2.18%)	23 (2.28%)
Siberian Husky	15 (2.05%)	6 (2.18%)	21 (2.08%)

Rottweilers	14 (1.91%)	5 (1.82%)	19 (1.89%)
Lhasa apso	11 (1.50%)	5 (1.82%)	16 (1.59%)
P value	1 <sup>ns</sup> Chi-square 0.2403		

**Table 4. Gender-wise distribution of Prevalence of Otitis externa.**

Gender	Retrospective study	Current study	Total cases
Male	415 (56.62%)	163 (59.27%)	578 (57.34%)
Female	318 (43.38%)	112 (40.73%)	430 (42.66%)
Total	733	275	1008
P value	0.448 <sup>ns</sup> Chi-square 0.577		

**Table 5. Prevalence of Otitis externa based on ear types in dogs.**

Ear types	Retrospective study (n=733)	Current study (n=275)	Total cases (n=1008)
Drop (n=481)	349 (47.61%)	132 (48.00%)	481 (47.72%)
Intermediate (n=244)	204 (27.83%)	40 (14.55%)	244 (24.21%)
Prick (n=283)	180 (24.56%)	103 (37.45%)	283 (28.07%)
P value	<0.00001 <sup>s</sup> Chi-square 26.4368		

**REFERENCES**

- Barua, A., Boruah, D., Phukan, A., Chandra, B., Baishya, J. B. D. and Barman, D., 2021. A study on prevalence of Otitis in dog in Guwahati, Assam.
- Baxter, M. and Lawler, D. C., 1972. The incidence and microbiology of Otitis externa of dogs and cats in New Zealand. *New Zea. Vet. J.*, **20**: 29-32.
- Bernardo, F. M., Martins, H. M. and Martins, M. L., 1998. A survey of mycotic Otitis externa of dogs in Lisbon. *Revista iberoamericana de micologia.*, **15**: 163-165.
- Chaudhary, M. and Mirakhur, K. K., 2002. Studies on occurrence of canine Otitis. *Indian Vet. J.*, **79**:748-749.
- Choudhury, S., 2014. Studies on Canine Bacterial Otitis Externa and its Therapeutic Management with special reference to clove oil. M.V.Sc., thesis submitted to the West Bengal University of Animal and Fishery Sciences, Kshudiram Bose Sarani, Kolkata, West Bengal.
- Cunha, F. M., Coutinho, S. D., Matera, A., Florio, W. A. B., Ramos, M. C. C. and Silveria, L., 2003. Clinical and Cytological evaluation of the external ear canal of the dogs with Otitis. *Revistadoeducacao-continuada- de CRMV-SP.*, **6**(1/3): 7-15.
- Dana, S., 2005. Studies on Prevalence and Therapeutic Aspect of *Malassezia pachydermatis* in Canine. M.V.Sc., thesis submitted to the West Bengal University of Animal and Fishery Sciences, Kshudiram Bose Sarani, Kolkata, West Bengal.

- Grono, L. R., 1969. Observations on the incidence of Otitis externa in the dog. *Aust. Vet. J.*, **45**(9): 417-419.
- Hayes, H. M., Pickle, L. W. and Wilson, G. P., 1987. Effects of ear type and weather on the hospital prevalence of canine Otitis externa. *Res. Vet. Sci.*, **42**: 294-298.
- Kashyap, R., 2017. Studies on prevalence and therapeutic management of Otitis externa in dogs. M.V.Sc., Thesis. Chhattisgarh Kamdhenu Vishwavidyalaya, Durg.
- Khan, A., Kumar, M. A. C., Ramesh, P. T., Ansar Kamran, C., Puttalakshamma, G. C. and Sudha, G., 2019. Epidemiology of Otitis in Dogs in and Around Bengaluru. *Frontier J. Vet. Anim. Sci.*, **8**(1): 11.
- Kim, K. H. and Choi, W. P., 1999. Microflora of the ear canal in healthy and dogs with Otitis externa. *Korean J. Vet. Res.*, **39**(3): 566-574.
- Kumar, S., Hussain, K., Sharma, R., Chhibber, S. and Sharma, N., 2014. Prevalence of canine Otitis externa in Jammu. *J. Anim. Res.*, **4**(1): 121-130.
- Lakshmi, K. and Tirumala Rao, D. S., 2013. Clinico-microbiological and therapeutic studies on canine Otitis externa. *Int. J. Pharm. Bio Sci.*, **4**(3): 1209- 1214.
- Masuda, A., Sukegawa, T., Mizumoto, N., Tani, H., Miyamoto, T., Sasai, K. and Baba, E., 2000. Study of lipid in the ear canal in canine Otitis externa with *Malassezia pachydermatis*. *J. Vet. Med. Sci.*, **62**(11): 1177-1182.
- Mhatre, M. D., 2005. Studies on etiopathology of bacterial and mycological infection of skin and ear in canines and their clinical management. M.V.Sc., thesis, Anand Agricultural University, Anand, Gujrat.
- Pradhan, A., 2016. Clinico-therapeutic studies on Otitis externa in dogs. M.V.Sc., thesis. Orissa University of Agriculture and Technology, Bhubaneswar.
- Sharma, V. D. and Rhoades, H. E., 1975. The occurrence and microbiology of Otitis externa in the dog. *J. Small Anim. Pract.*, **16**: 241-247.
- Zur, G., Lifshitz, B. and Bdolah, A. T., 2011. The association between the signalment, common causes of canine Otitis externa and pathogens. *J. Small Anim. Pract.*, **52**(5): 254-258.