

## **EPIDEMIOLOGICAL STUDIES OF OTITIS EXTERNA AT CARNIVORES**

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### **Summary**

Otitis externa is the most common disease of the canine and feline ear canal, which involves an acute or chronic inflammation of the epithelium of the external auditory meatus.

The goal of this study was to determine the prevalence rate of otitis externa and the influence of species, breed, age, sex and climatic variation. The research was performed on 356 canine and 83 feline which were attended in Clinics of Veterinary Medicine Faculty and private veterinary clinics.

Dogs and cats of all breeds and ages may be affected, but some groups are at higher risk: Cocker, Labrador, Setter, German Shepherd had the highest incidence. Dogs between 5-8 years of age and cats under 1 year are commonly affected. There is no apparent sex predisposition to otitis externa in either species.

Otitis externa represents an acute or chronic inflammation of the epithelium of the external auditory meatus, sometimes involving the pinna. It is a common and frustrating disease with multifactorial etiology (1,3,6,8).

Otitis externa affects dogs and cats of all breeds and ages, but occurs more frequently in some breeds than others, due to a number of anatomic and physiologic differences (BABA, 1981). Recent histologic comparisons of ear canal microscopic anatomy of different breeds of dogs indicate differences in number and distribution of cerumen glands, which may provide an explanation for the breed predilection (1,6).

Epidemiological studies of otitis externa at carnivores are necessary to elucidate the etiopathogenesis and to establish the correlation between incidence and some factors: breed, age, sex and climatic variations.

### **Materials and methods**

The research was performed on 464 dogs and 105 cats, attended in Clinics of Veterinary Medicine Faculty, Iasi, between 2002 and 2005.

Working with dogs and cats populations dispersed on a large area, the calculation of incidence and prevalence of otitis externa met with difficulties, because not all the animals with otitis externa were presented to the veterinarian. Therefore these two terms of morbidity were replaced with relative frequency, which refers to the presented casuistry.

### Results and discussions

The results of the epidemiological investigation for establish the relative frequency are presented in table 1

**Table 1**  
**Relative frequency of otitis externa at carnivores between 2002 and 2006**

| Species | Consulted animals | With otitis |     | Male |      | Female |      |
|---------|-------------------|-------------|-----|------|------|--------|------|
|         |                   | Nr.         | %   | Nr.  | %    | Nr.    | %    |
| Dogs    | 5329              | 464         | 8.7 | 228  | 49.2 | 236    | 50.8 |
| Cats    | 4572              | 105         | 2.3 | 54   | 51.4 | 51     | 48.6 |

Dates from table 1 reveal that relative frequency of otitis externa is higher at dogs (8.7%) than at cats (2.3%). The lower rate in cats may be due to the upright nature of the pinna and the lack of hair in the external auditory meatus, which enhance ventilation and drainage (1, 2, 6).

We also establish that there is no apparent sex predisposition to otitis externa in either species, the procentage of the two sexes beeing similar.

By this epidemiological investigation we determined the corelation between species, breed, age, sex, climatic variations and relative frequency of otitis externa. The results are presented in table 2,3,4,5 and 6.

**Table 2**  
**Corelation between breed and relative frequency of otitis externa at dogs**

| <b>Dogs with droopy ears</b> | <b>No</b>  | <b>%</b>    |
|------------------------------|------------|-------------|
| Brac                         | 27         | 5.8         |
| Caniche                      | 17         | 3.7         |
| Cocker                       | 120        | 26          |
| Labrador                     | 83         | 18          |
| Pechinez                     | 15         | 3.2         |
| Setter                       | 61         | 13.3        |
| Common breed                 | 15         | 3.2         |
| <b>Total</b>                 | <b>338</b> | <b>73.2</b> |
| <b>Prick eared dogs</b>      | <b>No</b>  | <b>%</b>    |
| Akita                        | 9          | 2.1         |
| Boxer                        | 9          | 2.1         |
| German Sheperd Dog           | 65         | 14          |
| Doberman                     | 6          | 1.1         |
| Dog Argentinian              | 7          | 1.6         |
| Pit-Bull                     | 7          | 1.6         |
| Rottweiler                   | 15         | 3.2         |
| Common breed                 | 8          | 3.1         |
| <b>Total</b>                 | <b>126</b> | <b>26.8</b> |
| <b>GENERAL TOTAL</b>         | <b>464</b> | <b>100</b>  |

The relative frequency of otitis externa is higher at dogs with droopy ears (73.2%) than prick eared dogs (26.8%). Otitis externa affects Cocker spaniels with a relative frequency of 26%, Labradors with 18% and Setters with 13.3%. From prick eared dogs, the most affected is German Shepherd dog with a relative frequency of 14%.

Otitis externa occurs more frequently in some breeds than others, due to a number of anatomic and physiologic differences (BABA, 1981).

**Table 3**  
**Corelation between breed and relative frequency of otitis externa at cats**

| Breed        | No  | %    |
|--------------|-----|------|
| Birman cat   | 31  | 29.5 |
| Persian cat  | 26  | 24.8 |
| Siamese cat  | 28  | 26.6 |
| Common breed | 20  | 19.1 |
| Total        | 105 | 100  |

Regarding the relative frequency related to the cat breed, it was noticed that otitis externa affects more Birman cats (29.5%), and the less predisposed is the Common breed (19.1%).

**Table 4**  
**Corelation between age and relative frequency of otitis externa at dogs**

| Age         | No  | %    |
|-------------|-----|------|
| < 1 year    | 49  | 10.6 |
| 1 – 2 years | 75  | 16.2 |
| 2 – 5 years | 131 | 28.2 |
| 5 – 8 years | 155 | 33.4 |
| > 8 years   | 54  | 11.6 |
| Total       | 464 | 100  |

Dogs of all ages may be affected with otitis externa, but some groups are at higher risk. We noticed 49 dogs under one year, then we registered a progressive increase of relative frequency correlated with age: 16.2% dogs between 1-2 years, 28.2% dogs between 2-5 years, 33.4% dogs between 5-8 years.

Otitis externa is seen in dogs most frequently between 5-8 years of age, reflecting the influence of co-factors, such as allergic conditions and keratinization disorders (1,2,8).

Cats are not as frequently affected by allergic disease and have a peak incidence of otitis under one year of age, 50 per cent of which are directly associated with ear mites. We obtain similar results presented in table 5.

**Table 5****Correlation between age and relative frequency of otitis externa at cats**

| Age         | No  | %    |
|-------------|-----|------|
| < 1 year    | 37  | 35.3 |
| 1 – 2 years | 25  | 23.8 |
| 2 – 5 years | 28  | 26.6 |
| > 5 years   | 15  | 14.3 |
| Total       | 105 | 100  |

To establish the correlation between relative frequency and climatic variations we centralized the presentation to consult in table 6

**Table 6****Corelation between climatic variations and relative frequency of otitis externa at carnivores**

| Species |    | Presentation at consult |     |     |     |      |      |      |      |      |     |     |     |
|---------|----|-------------------------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|
|         |    | I                       | II  | III | IV  | V    | VI   | VII  | VIII | IX   | X   | XI  | XI  |
| Dogs    | No | 12                      | 17  | 23  | 37  | 49   | 68   | 73   | 64   | 40   | 35  | 27  | 19  |
|         | %  | 2.5                     | 3.6 | 4.8 | 8.1 | 10.6 | 14.6 | 15.7 | 13.8 | 8.7  | 7.6 | 5.8 | 4.2 |
| Cats    | No | 3                       | 3   | 5   | 8   | 10   | 13   | 15   | 16   | 12   | 10  | 6   | 4   |
|         | %  | 2.8                     | 2.8 | 4.7 | 7.6 | 9.5  | 12.4 | 14.3 | 15.4 | 11.4 | 9.5 | 5.8 | 3.8 |

Regarding the relative frequency of otitis externa related to climatic variations we notice an increase of relative frequency in the summer months. Seasonal changes in environmental relative humidity and temperature may explain the increase of relative frequency of otitis in summer months.

**Conclusions**

1. Epidemiological studies of otitis externa at carnivores are necessary to elucidate the etiopathogenesis and to establish the correlation between incidence and some factors: breed, age, sex and climatic variations.
2. Relative frequency of otitis externa is higher at dogs than cats.
3. The relative frequency of otitis externa is higher at dogs with droopy ears (73,2%) than prick eared dogs (26,8%).
4. Otitis externa is seen in dogs most frequently between 5-8 years of age and at cats under one year of age.
5. There is no apparent sex predisposition to otitis externa in either species.
6. Otitis externa at carnivores has a seasonal evolution, depending of climatic variations.

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