

ISOLATION AND CHARACTERIZATION OF BACTERIA THAT CAUSE OTITIS EXTERNA IN DOG BREEDS POODLE, GERMAN SHEPHERD, DOBERMANN AND LABRADOR RETRIEVER IN BITOLA REGION

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ABSTRACT

For this examination, 15 samples were taken from different ages of dog breeds: Poodle, German Shepherd, Dobermann and Labrador Retriever, from the changed ear canal. The samples were taken in the Bitola region for the period from January 2016 to April 2018. Totally 15 strains were isolated and identified based on their growth, colony morphology, Gram stain, catalase and oxidase activity using standard protocols. From the results obtained, it can be concluded that the most common bacteria that cause otitis externa in dog from the above-mentioned races are: *Pseudomonas spp*, *Proteus spp* and *Staphylococcus spp*, which further cause and additional complications in their state of health.

Key words: Dogs, Otitis externa, Bacterial causes, Poodle, German Shepherd, Dobermann, Labrador Retriever.

I. Introduction

Inflammation on external ear Otitis externa is honor disease, for with contributes morphologically-anatomical features, before are on the ear shell itself ears channel in individual races of dogs (Stout-Graham et al., 1990; Bojkovski et al., 1995; Rooser et al., 2004). Inflammation is caused from various reasons, but is characterized with enlarged secretion on ear grease in the ear. For occurrence on disease a lot contributes, cartilaginous plate which from outside soon it close ear channel, and it is overgrown with a lot of fiber. Besides this and the various forms on the ear shell are from large importance namely, the disease's subject is nearly $\frac{3}{4}$ of race on dogs who have long ears and who free falling it cover entrance on ear channel Cocker Spaniel, Bobtail and puddles Pully (Bojkovski et al., 1995; Saridomichelakis et al., 2007). This anatomical placement on ear leads to that and in case on the smallest injury which lacquers secret, together with the ear cerumen what are lacquers in bigger quantity, at himself ears channel creating table which often are infects and leads to phenomenon on inflammation (Little et al., 1993; Huang et al., 1994; Bojkovski et al., 1995). Besides that, weak ventilation on ear channel in particular in dogs with clutter ears, allows inear channel are settle various causative agents (bacteria, fungi, external objects, dust, parasites) that contribute for causing on disease on ear channel and outer ear. Disease at dogs is manifested with unilateral or bilateral side (Gutteridge et al., 1974, Knapp et al., 1986; Bojkovski et al., 1995).

External factors for causing on inflammation on outer ears channel are: mechanical (cleaning on ear with various objects, pressing, tremors etc.), chemical (acids, bases, etc.), external bodies (grass, straw, wood and metal objects), parasites *Otodectes canis*, *Demodex* (Brennan et al., 1983; McKeever et al., 1988; Bojkovski et al., 1995).

Interior factors for causing inflammation are various and like most important we mention: intoxications, hormonal disorders, vitamin deficiencies, allergies and various infectious diseases

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in dogs (eg. fever). Enough often inflammation on external ear it cause big number various bacterial and fungal causes (Brennan et al., 1983; Bojkovski et al., 1995).

Symptoms: Sick dog has painful ear which scratches it with the paw, shakes head. Because of the pain, the dog is upset and even frightened. Sometimes it is relaxed and often lies. In most cases, the general health situation is unchanged. When touching the ear shell, especially on the ear shell, the dog reacts sharply to the pain and is distracted. It is possible, at the pressure of the ear canal to come out and fluid. The ear channel is red, sometimes swollen and in heavier causes unclean, filled with liquid or direct secret. Usually from the ear canal there is a strong odor from the very secret that breaks down into the canal. In cases where the cause of inflammation is of a mechanical, chemical nature, or when external bodies are present, it is noted that the process is unilateral (most common) and all symptoms are seen only on one ear. If the disease is not detected in a timely manner, or if an accurate diagnosis is not given in terms of accurate determinant of the causative factor, and at the same time adequate therapy is not taken, the disease can be complicated and the process extended even to the brain, which in the case of rotten inflammation leads to death (Bojkovski et al., 1995).

Therefore, each case should be considered seriously approached in terms of making the diagnosis, and in terms of therapy until its complete cure. The prognosis is favorable in a large number of cases. It is only unfavorable when inflammation leads to perforation of the hearing membrane and when inflammation passes from the outer to the middle and inner ear, and even to the brain (Griffin et al., 1993; Bojkovski et al., 1995).

II. Material and Methods

1. Samples

A totally 15 samples were taken from different ages of dog breeds: Poodle, German Shepherd, Doberman and Labrador Retriever in Bitola region Table.1

2. Isolation

Totally 15 stains samples were isolated Table.2

3. Characterization and identification

The different pure culture obtained were characterized for their colony morphology, Gram staining, cell morphology, catalase and oxidase reaction using standard protocols.

Table.1 Samples from clinical cases of dogs of breeds Poodle, German Shepherd, Doberman and Labrador Retriever (breed, ages and their sex).

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<i>Sample</i>	<i>Year</i>	<i>Breed</i>	<i>Age(Year)</i>	<i>Sex</i>
1	2016	<i>German Shepherd</i>	3,5	<i>Female</i>
2	2016	<i>Poodle</i>	4	<i>Female</i>
3	2016	<i>Labrador Retriever</i>	8	<i>Male</i>
4	2016	<i>Dobermann</i>	5,5	<i>Male</i>
5	2016	<i>German Shepherd</i>	6	<i>Male</i>
6	2016	<i>Labrador Retriever</i>	5	<i>Male</i>
7	2016	<i>Poodle</i>	5	<i>Male</i>
8	2016	<i>German Shepherd</i>	4,5	<i>Female</i>
9	2016	<i>Poodle</i>	9	<i>Female</i>
10	2017	<i>Labrador Retriever</i>	3	<i>Female</i>
11	2017	<i>German Shepherd</i>	7	<i>Female</i>
12	2017	<i>Poodle</i>	3,5	<i>Female</i>
13	2017	<i>Labrador Retriever</i>	4	<i>Male</i>
14	2017	<i>Poodle</i>	7	<i>Female</i>
15	2017	<i>Poodle</i>	6	<i>Male</i>

Table.2 Strains were isolated and identified

<i>Nº</i>	<i>Sample</i>	<i>Strains</i>	<i>Nº</i>	<i>Sample</i>	<i>Strains</i>
1	1	<i>K1</i>	9	8	<i>K8</i>
2	6	<i>K6</i>	10	11	<i>K11</i>
3	14	<i>K14</i>	11	3	<i>K3</i>
4	15	<i>K15</i>	12	5	<i>K5</i>
5	4	<i>K4</i>	13	12	<i>K12</i>
6	13	<i>K13</i>	14	7	<i>K7</i>
7	9	<i>K9</i>	15	10	<i>K10</i>
8	2	<i>K2</i>			

III. Results and Discussion

Fifteen strains isolated from 15 samples from clinical cases of dogs of breeds Poodle, German Shepherd, Dobermann and Labrador Retriever were characterized. The results of the performed examination are presented in Table 3

Table 3. Microorganisms isolated from causes otitis externa in dog

<i>Nº</i>	<i>Sample</i>	<i>Strains</i>	<i>Breed</i>	<i>Bacterial causes</i>	<i>Nº</i>	<i>Sample</i>	<i>Strains</i>	<i>Breed</i>	<i>Bacterial causes</i>
1	1	K1	German Shepherd	<i>Pseudomonas spp</i>	9	8	K8	Poodle	<i>Proteus spp</i>
2	6	K6	Poodle	<i>Proteus spp</i>	10	11	K11	Labrador Retriever	<i>Pseudomonas spp</i>
3	14	K14	Labrador Retriever	<i>Pseudomonas spp</i>	11	3	K3	German Shepherd	<i>Proteus spp</i>
4	15	K15	Dobermann	<i>Pseudomonas spp</i>	12	5	K5	Poodle	<i>Pseudomonas spp</i>
5	4	K4	German Shepherd	<i>Pseudomonas spp</i>	13	12	K12	Labrador Retriever	<i>Staphylococcus spp</i>
6	13	K13	Labrador Retriever	<i>Staphylococcus spp</i>	14	7	K7	Poodle	<i>Proteus spp</i>
7	9	K9	Poodle	<i>Proteus spp</i>	15	10	K10	Poodle	<i>Pseudomonas spp</i>
8	2	K2	German Shepherd	<i>Staphylococcus Spp</i>					

From the results presented in Table 3 it can be concluded that the most commonly isolated bacterial causes of inflammation of the tonsillitis in dogs of the breeds Poodle, German Shepherd, Dobermann and Labrador Retriever in Bitola region are *Pseudomonas spp* 47%, *Proteus spp* 33% and *Staphylococcus spp* 20 %. These findings agreed with the results of other studies (Anthea et al., 2007; Bugden et al., 2012; Giovanni et al., 2016)

Recommendations:

- Planning an annual review of the pets at the parent veterinarian.
- Check regularly the leak from the ear, to see if there is pain or an unpleasant odor from the ear.
- If the owner notes any changes, it is necessary to consult with his veterinarian.
- It is necessary to find the right way to clean the ears of the dogs. If moisture is a factor that causes inflammation of the ear, it is necessary to dry the ear and to completely remove the water from the ear canal during swimming or bathing with a special drying agent, cotton or gas can be used to remove the water from the outer part on the ear, but not the inside of the ear.

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- Regular hair trimming that irritates the ear canal, especially in dogs that have a clogged ear that is quite overgrown with hairs in the interior, can be a preventative measure in inflammatory processes of the ear.
- Do not apply cleaning products that can cause irritation or mechanical damage to the tympanic membrane.
- Owners should be careful not to expose their pets with their pets to places with grassy vegetation, as it may result in penetration of a foreign body into the ear canal and cause inflammatory processes

IV. References

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