

Dermatophytes in household cats and dogs

Dermatófitos em gatos e cães domésticos

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Resumo

Os dermatófitos constituem um grupo de fungos filamentosos que podem colonizar tecidos queratinizados de seres humanos e animais, causando lesões dermatofíticas. Diante da ocorrência frequente de dermatofitoses em humanos e por se tratar de uma dermatozoonose, com destaque ao papel dos animais domésticos na transmissão de fungos para o homem, decidiu-se pelo isolamento e identificação de dermatófitos a partir de escamas de pele coletadas de cães e gatos encaminhados às clínicas veterinárias da cidade de Alfenas, Minas Gerais, Brasil. O material clínico foi coletado em áreas da cabeça, costas e abdome de 40 gatos e 40 cães. O isolamento de dermatófitos ocorreu em 13 cães (32,5%) e 14 gatos (35%), sendo que apenas 2 (7,4%) destes animais apresentavam lesões características de dermatofitose. Dados disponíveis na literatura revelam a ocorrência de número considerável de animais portadores assintomáticos mas transmissores potenciais dos agentes da dermatofitose. Os fungos foram identificados como *Microsporum canis* (52,2%), *Microsporum gypseum* (14,9%) e espécies do gênero *Trichophyton* (31,9%). *M. canis* foi a espécie predominante entre os gatos (67,8%) e *Trichophyton* spp. entre os cães (57,9%). A alta probabilidade de contágio humano, o custo do tratamento e dificuldades associadas a medidas de controle dos casos de dermatofitose apontam para a necessidade e importância deste estudo.

Palavras-chave: dermatófitos, cães, gatos, Brasil.

Abstract

The dermatophytes constitute a group of filamentous fungi that can colonize keratinized tissues of human beings and animals, causing dermatophytic lesions. Given the frequent occurrence of dermatophytosis in urban centers and the role of pets in the spread of fungi to man, it was decided to isolate and identify dermatophytes from skin scales collected from household cats and dogs sent to veterinary clinics in Alfenas city, Minas Gerais State, Brazil. The clinical material was collected from the areas of the head, back and abdomen of 40 cats and 40 dogs. The isolation of dermatophytes occurred in 13 dogs (32.5%) and 14 cats (35%), and only two (7.4%) animals presented lesions of dermatophytosis. Literature available data shows the occurrence of considerable number of asymptomatic carrier animals but potential transmitters of dermatophytosis. The fungi were identified as *Microsporum canis* (52.2%), *Microsporum gypseum* (14.9%) and species of the genus *Trichophyton* (31.9%). *M. canis* was the predominant species among cats (67.8%) and *Trichophyton* spp among dogs (57.9%). The high probability of human infection, the treatment cost and difficulties associated with control measures in cases of dermatophytosis point to the need and importance of this study.

Keywords: dermatophytes, dogs, cats, Brazil.

Introduction

The dermatophytes constitute a group of filamentous fungi, taxonomically related, that is able to colonize keratinized tissues (skin, fur and nails) of men and animals, causing dermatophytic lesions, popularly known as tinea. They have an enzymatic system essential to metabolize the keratin, using it as a nutritional and energy substrate (Carrillo-Muñoz & Tur, 1995).

These fungi are usually divided into three ecological groups according to their primary host or habitat: the geophilic (soil), the zoophilic (animal) and the anthropophilic (human). They are classified in three genera: *Epidermophyton*, *Microsporum*

and *Trichophyton*, which include about 40 species, however, only few species of genus *Microsporum* and *Trichophyton* are usually associated with dermatophytosis in domestic animals (Cabañes, 2000).

Dermatophytes are among the few fungi causing communicable disease, that is, disease acquired from infected animals or birds or from the fomites they have engendered (Weitzman & Summerbell, 1995).

The distribution of zoophilic dermatophytes among the animals is varied and species such as *M. canis*, *T. mentagrophytes* and *T. verrucosum* are usually the cause of dermatophytosis in humans in several world regions

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(Cabañes, 2000; Takahashi, 2003). Pets may be largely responsible for the steady increase in the involvement of zoophilic species in the etiology of human dermatophytosis (Filipello Marchisio et al., 1995).

The close contact of the human being with domesticated animals may predispose to the occurrence of fungal infections by dermatophytes. So, the dog's and cat's dermatophytosis are important zoonosis, since these are the domesticated animals that have more contact with the man (Dieckmann, 1998; Nobre et al., 2000).

Microsporum canis is the most isolated species from dogs and cats, with percentages from 40 to 90% among dogs and higher than 90% among the cats, which are the main source of this species. *T. mentagrophytes* and *M. gypseum* are species isolated from these animals with minor frequency. These three species represent 96% of the isolated dermatophytes from dogs and 98% from cats (Cabañes, 2000). Several authors have shown equal standard of isolation from these animals, being *M. canis* the most isolated species and *T. mentagrophytes* and *M. gypseum* isolated with lower rates (Cabañes, 2000; Mancianti et al., 2002; Brilhante et al., 2003; Khosravi & Mahmoudi, 2003; Cafarchia et al., 2006).

The animals constitute the main source of dermatophytosis because the direct transmission of spores or even because the transmission by the contaminated objects, besides often being asymptomatic carriers of the fungus, not presenting characteristic visible lesions of mycoses (Moya, 2003).

The dermatophyte structure commonly associated with contagion is the oblong to rounded and persistent spore, arthroconidium or chlamydospore found within or attached to the exterior of infected hairs, fur, and within skin scales. These structures may persist for years in the environment (Rippon, 1998) and are highly heat resistant, particularly when embedded in hair, fur or skin scales (Sinski et al., 1980).

Due to the risks of transmission to other animals and humans, the accomplishment of periodical studies to identify involved agents in cases of dermatophytosis becomes important for understanding the epidemiology of the disease and to establish preventive measures, strategies of control and public health issues related to the different kinds of dermatophytosis (Filipello Marchisio, 1995; Costa et al., 2002).

The recognition of dermatophyte taxonomy is clinically relevant. The need for identification of the dermatophyte species in clinical settings is often related to epidemiological concerns. The knowledge dermatophytes that (i) may have animal carriers and (ii) are linked to recurrent institutional or family outbreaks is especially relevant (Arnou et al., 1991; Klokke et al., 1966).

Given the frequent occurrence of dermatophytosis in urban centers and the role of domestic animals in transmission cycle to the humans, the aim of the study was the isolation and identification of dermatophytes from household dogs and cats led to veterinary clinics in Alfenas city, Minas Gerais state, Brazil.

Material and methods

A number of 80 domesticated animals with or without dermatophytic lesions and sent to veterinary clinics were

evaluated for the presence of dermatophytes. The results were correlated to the biology of these animals such as breed, age and clinical conditions in order to understand the interaction of these fungi with pets and risk of transmission to humans.

Mycological examination

The animals were screened for the presence of dermatophytic lesion by subjecting them to clinical examination to check for clinically suggestive lesions.

Specimen collection

The skin scales were collected from 80 animals (40 dogs and 40 cats), males and females, from different breeds, ages and clinical conditions, in veterinary clinics in Alfenas from January 2007 to December 2007. The collection proceedings were approved by the Committee on Animal Ethics of Universidade Federal de Alfenas and performed according to the International Guiding Principles for Biomedical Research Involving Animals.

Data on breed, sex, clinical and raising conditions, characteristic of fur, presence of skin lesions, besides the body region of sample collection were recorded on individual forms for each animal. The forms were also filled with informations such as the day and body region of collection and clinical conditions of the animals.

The collection of skin scales from the animals was performed at the head, back and abdomen and in areas with suggestive dermatophytic lesions. The "carpet square technique" (Mariat & Adam-Campos, 1967) was applied to collect these samples. Briefly, the skin was cleaned with alcohol and the advancing border of the lesion or an area of healthy skin was put in contact with squares of 6 cm length and 6 cm width of nylon carpet, previously washed, dried, packed individually and sterilized. These squares were rubbed separately on the head, back and abdominal regions of each one of the animals. After, the carpet was kept in its individual package and identified. Samples of fur of injured areas were taken with sterilized tweezers. The furs were placed into sterilized and identified tubes.

After the collection, the samples were stored at 8°C until processing. The elapsed time between the collection and the processing of the samples was never over 24h.

Specimen Processing

The carpets were put into contact with DTM medium in Petri plates, pressured and left in contact during 15 min. After this period, the plates were identified and incubated at 25 °C. The fungal growth was observed during 20 days. The fungi whose colonies changed the medium color from yellow to red were isolated in media containing Sabouraud Agar supplemented with chloramphenicol (0.1 g/L) and cycloheximide (0.5 g/L). A part of the fur was submitted to the direct microscopical examination, after clarification with KOH 20% during 30 min, for the research of dermatophyte characteristic structures. The remaining fur was sown in tubes containing the selective and differential medium for the presumptive identification of dermatophytes, Dermatophyte Test Medium (DTM) (10 g/L

soy peptone, 10 g/L dextrose, 20 g/L Agar, 0.2 g/L phenol red, 0.5 g/L cycloheximide and 0.1 g/L chloramphenicol). The media were kept at 25°C and the observation of probable fungal increasing was done during 20 days. The colonies that had promoted the medium color alteration from yellow to red were isolated in Sabouraud Agar medium supplemented with chloramphenicol (0.1 g/L) and cycloheximide (0.5 g/L).

The dermatophyte suggestive colonies were presumptively identified by the colonial morphology and production of alkaline metabolites which cause the color change in the DTM medium from yellow to red (Taplin et al., 1969).

Fungal Identification

The combined macro and microcultivation in potato dextrose Agar were performed to identify the suggestive colonies. The macrocultivation during a period of 20 days allowed the analysis of morphological and macroscopical characteristics of the fungus giant colony as texture (creamed, glabrous, membranous, cottoned, velvety, granular, pulverulent, powdery), the color of the surface and the reverse part of the colony, the pigment production and the presence of aerial and deep mycelia.

After the microcultivation and the staining with blue-cotton lactophenol dye, the morphological features of colony fragments were observed microscopically being possible the observation and analysis of fructification structures (microconidia and macroconidia, the most important ones in the identification of dermatophytes), their numbers and wall thickness, their shape and size (pyriform, club-shaped to balloon-shaped, pencil-shaped, cigar-shaped etc), the evaluation of ornamentation's structures (hyphae in racket, pectinated hyphae, hyphae in spiral or in tendril etc), pedicels and nodular organs.

The obtained data were compared and analysed according to Kwon-Chung and Bennett (Kwon-Chung & Bennett; Kane et al., 1997). The identification of the species was established through macroscopical characteristics and macroconidia/microconidia observed microscopically (Figure 1).

Statistical analysis

The One way Anova was performed to determine whether there was a significant difference among the sampled groups. Differences of $p < 0.05$ were considered significant.

Results

The dermatophytes were isolated from 13 dogs (32.5%) and 14 cats (35%), in a total of 47 positive cultures, being 19 isolated from dogs and 28 from cats. Twenty five cultures were identified as *M. canis* (52.2%), seven as *M. gypseum* (14.9%) and 15 as species belonging to *Trichophyton* genus (31.9%) (Figure 1).

The number and species of dermatophytes isolated from the cats and dogs are in table 1. According to these numbers, the percentage of isolation of *M. canis* was 24.0% from the dogs and 76.0% from the cats. The percentages of *M. gypseum* isolation were 28.6% and 71.4% from the cats and dogs, respectively and for *Trichophyton* spp, 26.7% from canines and 73.3% from felines.

The table 2 shows the number of each species of dermatophytes in relation to the dog's and cat's body regions. This is the first study that relates the dermatophyte species and the animal body region of isolation. There were not meaningful differences among the number of positive cultures for dermatophytes and each corporal region. However, among *Trichophyton* spp isolated from the dogs, a prevalence of

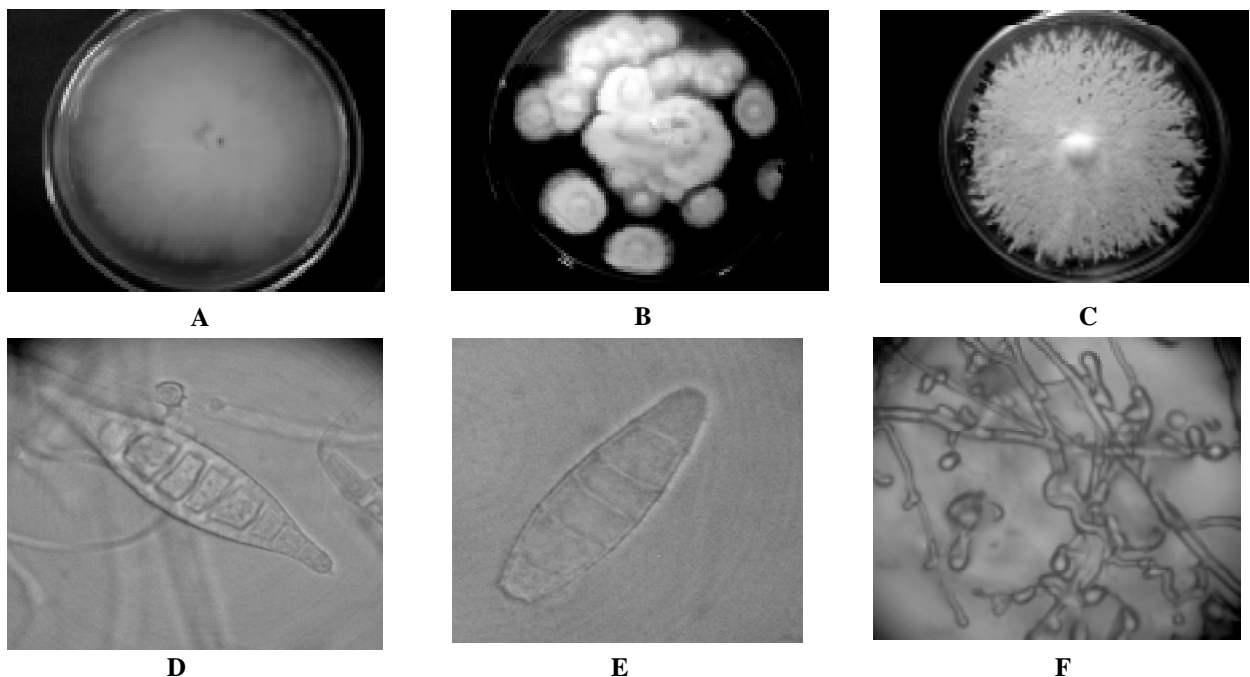


Figure 1: Macroscopical and Microscopical characteristics of some dermatophyte positive cultures recovered from household dogs and cats. A. Reverse of giant colony of *Microsporium canis*; B. Surface of giant colony of *Trichophyton* species; C. Surface of giant colony of *Microsporium gypseum*; D. Macroconidia of *Microsporium canis*; E. Macroconidia of *Microsporium gypseum*; F. Microconidia of *Trichophyton* species.

Table 1: Identification and percentage of dermatophyte isolated from household cats and dogs

Identified species	Animal from which the sample provided n(%)*	
	Dogs (n=40)	Cats (n=40)
<i>M. canis</i>	6 (15%)	19 (47.5%)
<i>M. gypseum</i>	2 (5%)	5 (12.5%)
<i>Trichophyton</i> spp	11 (27.5%)	4 (10%)

*n(%)= number of animals (percentage)

Table 2: Percentage of dermatophyte species isolated from different body regions of household dogs and cats

Identified species	Dogs (n*= 40)			Cats (n= 40)		
	Abdomen	Back	Head	Abdomen	Back	Head
<i>M. canis</i>	3 (7.5%)	2 (5%)	1 (2.5%)	6 (15%)	8 (20%)	5 (12.5%)
<i>M. gypseum</i>	1 (2.5%)	-	1 (2.5%)	1 (2.5%)	-	4 (10%)
<i>Trichophyton</i> SP	1 (2.5%)	6 (15%)	4 (10%)	1 (2.5%)	2 (5%)	1 (2.5%)
Total	5 (12.5%)	8 (20%)	6 (15%)	8 (20%)	10 (25%)	10 (25%)

n*= number of animals

isolates from the head and back regions was verified and among the species *M. gypseum* isolated from cats, a prevalence of isolates from head regions occurred.

The skin scales were collected from a varied number of dogs and the dermatophytes were recovered from 23% dogs without defined breed, 15.4% Lhasa apso, 15.4% Poodle, 15.4% Pinscher, 7.7% Yorkshire, 7.7% German shepherd dog, 7.7% Basset hound and 7.7% Fox terrier. Regarding the felines, the collection occurred in animals without defined breed (28.6%) and in Persian (42.8%) and Siamese (28.6%) cats. The samples were collected from male and female dogs and cats. Concerning the age, the collection occurred in puppies (7) and kittens (3) (the age about 1 to 12 months), in young animals (1 dog and 4 cats) (the age about 12 to 48 months) and in animals with age over 48 months (5 dogs and 7 gatos). The samples were obtained from dogs and cats with short and long fur. The collection occurred from animals which had lived exclusively in domestic environment and from dogs and cats which had periodical contact to outside environment. In general, the animals were healthy and presented no skin lesions as alopecia or peripheral scaling and few of them were in clinics for treatment of any disease. Only 2 cats and 2 dogs presented apparent skin injuries suggestive of dermatophytosis.

According to Table 3, positive dogs to dermatophytes were 69.2% females (9) and 30.7% males (4) and regarding the age, 53.8% were puppies. Similar number ($p>0.05$) of positive animals for dermatophytes was found among dogs and cats created in contact to the street and only in residential environment; the same fact happened also in relation to the type of fur, with comparative number ($p>0.05$) of positive dogs with short and long fur. Regarding the clinical conditions of the animals, it was observed the large positivity among the healthy animals and also among the dogs without apparent cutaneous lesions, what sets the occurrence of asymptomatic holders.

In relation to the cats, the Table 4 shows the dermatophyte isolation in 28.6% of no-defined breed cats, in 28.6% of Siamese cats and 42.8% of Persian ones. Among positive cats 64.3% were females (9) and 35.7% were males (5) and concerning the age, it was observed 78.6% of positive animals in middle and advanced age. Regarding the fur characteristics, 57.1% of the positive cats had short fur and 42.8% presented a long one. Among the 14 positive cats, just one kept periodical contact to outside residential environment. Eleven animals were healthy. One cat was recovering from a surgery in which the two posterior legs had been amputated, and two animals

Table 3: Distribution of the species isolated from the 13 dogs positive for the presence of dermatophyte fungi

Sex		Age (months)			Pelage	
Males	Females	1-12	12-48	>48	Short	Long
4	9	7	1	5	7	6
Habitat		Previous clinical conditions		Lesions		
Outside house and residential	Only residential	Healthy	Sick	Yes	No	
7	6	10	3	2	11	

Table 4: Distribution of the species isolated from the 14 cats positive for the presence of dermatophyte fungi

Sex		Age (months)			Pelage			
Males	Females	1-12	12-48	>48	Short	Long		
5	9	3	4	7	8	6		
Habitat		Previous clinical conditions		Lesions		Breed		
Outside house and residential	Only residential	Healthy	Sick	Yes	No	No-defined breed	Siamese	Persian
1	13	11	3	2	12	4	4	6

had presented apparent cutaneous lesions, clinically diagnosed as mycotic lesions.

Discussion and conclusion

The contagiousness among animal communities, high cost of treatment, difficulty of control measures, and the public health consequences of animal ringworm explain the great importance of dermatophytosis (Chermette, 2008).

The dermatophyte species identified in this research are correlated with the isolated species from cats and dogs from different regions, according to the literature description. Brillhante et al. (2003) isolated dermatophytes from 14.3% of 189 dogs and this result is comparable to the values found by Cabañes et al. (1997) of 13% from 105 dogs. Cafarchia et al. (2006) isolated dermatophytes from 20.5% of 268 dogs and 28.2% of 156 cats. We found dermatophytes in 32.5% from 40 dogs but our isolation rate in 40 cats was 35% and Cabañes et al. (1997) found dermatophytes in 33.9% from 56 feline specimens in Barcelona, Spain. Caretta et al. (1989) isolated dermatophytes from 36.9% of 168 dogs and 75% of 93 cats.

Cabañes et al. (2000) found *M. canis* as the most isolated species (77.8%), followed by *T. mentagrophytes* (13.3%) and *M. gypseum* (8.9%). Khosravi & Mahmoud (2003), in a research about dermatophytosis in several species of domesticated animals in Iran, had related *M. canis* (38.3%), *T. verrucosum* (31.8%), *T. mentagrophytes* (13.3%) and *M. gypseum* (7.7%) as the isolated species. Brillhante et al. (2003) displayed the percentage of *M. canis* isolation of 95% and *M. gypseum* and *T. mentagrophytes* of 2.5% each one. Our results agree to the ones described by Cabañes et al. (2000) and Khosravi & Mahmoud (2003) in that *M. canis* was isolated in a higher percentage than *Trichophyton* sp and *M. gypseum* being 53.2%, 31.9% and 14.9% the respective values.

Mancianti et al. (2002) isolated dermatophytes from symptomatic dogs and cats in the region of Toscana in Italy. In that study, *M. canis* represented 83% and 97%, *M. gypseum* represented 13% and 2.6% and *T. mentagrophytes* 5.5% and 0.2% of the dermatophytes from dogs and cats, respectively.

To Khosravi & Mahmoud (2003) the most isolated species from dogs and cats was *M. canis*, with percentages of isolation at 87.2% and 50% respectively. In our study, the most isolated species was also *M. canis* but in lower frequency in dogs (15%) than in cats (47.5%) when compared to the study of Khosravi & Mahmoud. Our isolation rates agrees with the results found by Caretta et al. (1989), in which *M. canis* appears once again as the more often isolated species from felines (58%) than canines (19.6%). Balda et al. (2004) also found *M. canis* as the etiological agent isolated predominantly from dogs and cats with dermatophytic lesions in São Paulo. In our study, as well as quoted by different authors, *M. canis* was also the most isolated species from the cats (67.8%) and with predominance on back and abdomen regions. This species represented 31.6% of the isolates from dogs. *M. gypseum* represented 10.5% and 17.8% of isolates from dogs and cats, respectively. There was predominance of *M. gypseum* on the cat heads and this fungus wasn't isolated

from the backs of these animals. *Trichophyton* spp was isolated in a higher percentage from dogs (57.9%) and in a lower percentage from cats (14.3%). This fungus predominated in isolates from dog backs. Other studies weren't found to compare dermatophytes with body sites of isolation.

According to Ribeiro (2005), a great number of feline dermatophytosis cases are caused by one of the three dermatophyte fungi: *M. canis*, *M. gypseum* and *T. mentagrophytes*, being *M. canis* the microorganism involved in 95 to 98% of cases. About the predominance of *M. canis* in felines, Nobre et al. (2000) pointed out that, among the domesticated animals, the cats were the main disseminators of this dermatophyte species. The results that we found corroborate with the data about the percentual value of *M. canis* in felines.

No statistically significant difference ($p > 0.05$) was found between animals and dermatophyte species, while *M. canis* was the species more isolated in our study both in dogs and cats.

The macroscopic and microscopic analysis of *M. canis* and *M. gypseum* offered no difficulties, because the presence of pigmentation, typical colony aspects and the presence of macroconidia and microconidia allowed direct conclusions. Among the species of *Trichophyton* genus, both the macroscopic and microscopic characteristics were not well defined, so allowing the identification of the isolates till genus but not till the species level, making necessary further evaluations.

In Table 3 and 4 the number of positive animals according to their characteristics are presented. However, since the collection had been performed from different number of animals for each variant analysed (sex, age, fur kind, raising conditions, breed, clinical condition and the presence of visible lesions) was not possible to correlate major or minor dermatophytosis prevalence for each one of these variants.

In a study of Cafarchia et al. (2006) with 424 animals (268 dogs and 156 cats) in southern Italy, young dogs and cats, especially those younger than 1 year, showed a statistically significant higher prevalence of *M. canis* infection than older animals. No statistically significant association was found between infection and sex in cats and dogs, but male dogs were affected in a large extension by dermatophytes in our evaluation. Among breeds, Yorkshire terriers showed the highest positivity (50%) caused mainly by *M. canis* (46.6%), while no differences were noticed for cats.

In our study, a great number of positive dogs and cats who were healthy and without apparent cutaneous lesions was observed, what corroborates with data that had already been reported by several authors about the occurrence of asymptomatic holders (Dieckmann, 1998; Nunes, 1998; Ribeiro, 2005; Cafarchia et al., 2006; Patel et al., 2006; Larsson et al., 2007).

Dieckmann (1998) verified that 30% of the cats assisted by the Veterinary Policlinics at the Fluminense Federal University, Brazil, were asymptomatic *M. canis* holders. Nunes (1998) also identified *M. canis* in asymptomatic cats assisted by the Protective Society for Animals in Belo Horizonte, Brazil, with frequency of 39.7%. Although *M. canis* is the main agent related

to transmission in asymptomatic cats, other dermatophytes such as *M. gypseum*, *T. mentagrophytes*, can also be asymptomatic sources of fungal infections in these animals (Dieckmann, 1998). The percentages of asymptomatic cat and dog dermatophyte holders were 31.6% and 28.9%, respectively, in our study.

Many authors argue that there is no relationship between the sexes of the animals and predisposition to dermatophytosis (Sparkes et al., 1993; Cabañes et al., 1997; Mancianti et al., 2002; Brilhante et al., 2003; Balda et al., 2004) and we also didn't find relationship among animal gender and dermatophyte isolation.

About the relationship between age and installation of dermatophytosis, most authors say that there is a greater involvement of dogs and cats, aged up to 12 months years old (Sparkes et al., 1993; Cabañes et al., 1997; Larsson et al., 1997; Mancianti et al., 2002; Brilhante et al., 2003; Cafarchia et al., 2006). According to Balda et al. (2004) it is possible that this major susceptibility of the young animals in acquiring the infection is linked to the immaturity of immunological system. Among positive dogs to dermatophytes, we isolated fungus in 53.8% from animals with 1 to 12 months and in 38.5% from animals with more than 48 months. A lower rate of isolation was found in animals with 12 to 48 months but no statistically significant difference ($p>0.05$) was found between animals and their ages.

Sparkes et al. (1993) and Mancianti et al. (2002) obtained high proportions of positive cultures among long fur cats. Balda et al. (2004) observed that, among dogs affected by dermatophytes, 52.5% presented long pelage. In our study, there were found similar number of positive dogs to dermatophytes in cases of animals with short and long fur ($p>0.05$). Among the felines, this number was 47.3%. Lewis et al. (1991) had gotten higher percentages of positive cultures among short pelage animals as we found to cats, according to our results 57.1% of the positive felines had short fur and 42.8% presented a long one.

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The dermatophyte isolation from asymptomatic felines was reported with more frequency in animals with access to the outside residential environment (Sparkes et al., 1993). We didn't find correlation among dermatophyte isolation from cats with residential life and outside residential one because the discordant number of animals in each group, being only 1 cat with outside residential life. Among dogs, 46.2% from them presented residential life and 53.8% presented outside one and there wasn't seen significant difference among dermatophyte isolation in both groups ($p>0.05$).

Regarding the predisposition related to the breed among dogs, it is evidenced the great susceptibility of animals from Yorkshire breed (Cafarchia, 2006). Among the felines, the Persian breed is the most quoted concerning the predisposition to the dermatophytes (Lewis et al., 1991; Balda et al., 2004). According to Balda et al. (2004) one hypothesis is that genetic factors that select some type of dysfunction related to the immune system cells might influence in the susceptibility of certain breeds in acquiring dermatophytic infection. According to the breeds of the cats and dogs that we analysed and the percentage of dermatophyte isolation, significant differences in susceptibility of animals from different breeds to dermatophytes weren't seen.

In this study, 31.3% of healthy animals were positive for the presence of dermatophytes and among the total number of animals positive to dermatophyte isolation, 77.7% of them were healthy and 22.3% were sick. Our data agree with the ones presented by Larsson et al. (1997), Brilhante et al. (2003), Khosravi & Mahmoud (2003) and Machado et al. (2004) that point to the high percentages of isolation from healthy dogs and cats.

Since the isolated fungi can be potentially pathogenic to the humans, this research comes to demonstrate the risk that there is on the human contact with domesticated animals, despite the absence of the signs or clinical symptoms from dermatophytic infection. In this last case the risks become greater due to the non rejection feeling for these animals mainly by children.

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