

HUMAN BEEN MYIASIS IN THE UBERLÂNDIA REGION, STATE OF MINAS GERAIS, BRAZIL

MIÍASES EM HUMANOS NA REGIÃO DE UBERLÂNDIA, MINAS GERAIS, BRASIL

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ABSTRACT: Epidemiological aspects of human been myiasis diagnosed at the a teaching hospital in Uberlândia were preliminarily described in retrospective analysis from January 1986 to February 1997. Two hundred and twenty-two cases of myiasis (51.5%) were retrieved from 431 medical charts analyzed, 133 of which (59.9%) were from the Clinical Ward and 89 (40.1%) from the Emergency Room. The parasitosis occurred mostly in male patients (64%). Myiasis on children and young adults up to one, five and 20 years old represented 11.7%, 30.1% and 63% of the cases, respectively. In 66 (29.7%) medical charts, diagnoses indicated myiasis caused by *Dermatobia hominis*. There was no registration of causative species in the remaining charts. The number of myiasis case reports increased between October and April (the hottest and most humid period of the year in Uberlândia). Physical, economical, social and cultural aspects that appear to be associated to the prevalence of human myiasis in Uberlândia during the study period are discussed.

UNITERMS: Human myiasis; Epidemiology; *Dermatobia hominis*.

INTRODUCTION

Generally, in Brazil, information on human myiasis comes from case reports along with the identification of the causative species, infestation conditions, and clinical pathologic aspects. Descriptions of clinical manifestations are commonly made as these are seen as either rare or exuberant (ROSSI; ZUCOLOTO, 1973; FAVORETTO et al., 1994). The daily routine of the physician demands priority in the treatment of the lesions and often the withdrawn larvae are discarded and therefore not identified. Moreover, normally myiasis cases do not occur frequently. To accompany directly a great number of cases would demand a long period of time. As a result, it is not common for studies *in locus* to gather a large number of cases in a determined place.

The utilization of secondary data about these parasitosis may present some limitations, including the absence of specific written diagnosis of the causative species in many medical charts. On the other hand, it

would permit a compiling of a great number of cases, which would in turn provide the visualization of factors associated to myiasis in a determined region as well as inferring seasonality. Considering the particularities of these data, the present work aimed to make a preliminary study on the epidemiological aspects related to myiasis from charts analysis which cases were diagnosed at a teaching hospital in Uberlândia (18° 55' 23" Lat. S and 48° 17' 19" Long. W), State of Minas Gerais.

MATERIALS AND METHODS

The study was carried out through analysis of charts from the Medical Files Division (Divisão de Arquivos Médicos) at the Hospital of Clinics, Uberlândia's Federal University (HCUFU). This hospital is a public institution that offers free services and attends patients from Uberlândia and vicinity cities. A total of 431 previously selected charts of patients who were attended from January 1986 to February 1997 were analyzed.

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These charts belonged to patients who had been treated in the Clinical Ward (CW) and in the Emergency Room (ER). Only those cases, which clearly indicated myiasis diagnose were included in the study. Information such as age, sex and residence locality as well as the dates when cases were recorded, wound localization on the body and possible associated factors was researched. When multiple lesions on different parts of the body were described, each one of the wound localization was recorded separately on a file card.

Cases in which charts were recorded withdrawn of “Berne” – common name of larvae of *Dermatobia hominis* Linnaeus Jr. (1781) (Diptera: Cuterebridae) causing myiasis in Brazil (GUIMARÃES; PAPAVERO, 2000) – and withdrawn of only one larvae from each furunculous wound of patients were considered myiasis cases caused by *D. hominis*. Those cases, which causative species were not named were included in the group of myiasis caused by “other species”.

RESULTS

Two hundred and twenty two cases of myiasis (51.5%) were retrieved from 431 medical charts analyzed: 133 (59.9%) from the CW and 89 (40.1%) from the ER. Cases were excluded for not featuring enough information about the parasitosis diagnosis. Many of the 222 charts did not contain information on all the researched aspects. Statistical analysis considered all the retrieved charts. Because of this, the sum of the presented percentages did not achieve 100% for some studied aspects.

The parasitosis occurred mostly in male patients (64%) from Uberlândia (78%) (Table 1). Of these, 54.1% resided in urban area, whereas 11.7% in the countryside. There was no information on where patients resided in the remaining charts. Myiasis on children and young adults up to one, five and 20 years old represented 11.7%, 30.1% and 53.1% of the cases, respectively (Table 1).

Wounds were mostly found on the head, followed by limbs and torso (Table 2). Sixteen patients (7.2%) presented myiasis on more than one body area.

In 66 (29.7%) medical charts, there were indications of myiasis caused by *D. hominis*. There was no indication of the causative species in the remaining records. Nevertheless, many of them reported withdrawing many larvae and clinical aspects of the wound. The percentage of myiasis cases caused by *D. hominis* and other species, treated in the two medical units, were respectively: 40.5% (36) and 59.5% (53) in the ER, and 22.6% (30) and 77.4% (103) in the CW. Cases of myiasis caused by *D. hominis* occurred more

frequently on the head (63.2%), followed by limbs (19.1%) and torso (13.2%). There were two cases in which patients sought medical help after unsuccessful attempts of withdrawing the “Berne” themselves. In 21.7% (34) of myiasis cases caused by “other species” of flies, there were reports of associated factors or diseases such as wounds (5), alcoholism (5), psychiatric diseases (4), post operative cases (4), pneumonia (4), Hansen’s disease (3) and *diabetes mellitus* (2).

According to 5th Meteorological District of Uberlândia, the cumulative average monthly temperature and precipitation from May to September and October to April during 1986-1996 were 21.0°C, 21.2 mm and 23.5°C, 221.7mm, respectively. The number of myiasis case reports increased between October and April (the hottest and most humid period of the year). This was due to *D. hominis* and to “other species” of flies as well (Figure 1).

DISCUSSION

The reporting of the etiologic agent in the medical charts only in *D. hominis* cases could be due to their peculiar larval morphology and their clinic signs as well. Larvae from species other than those of *D. hominis* demand detailed morphologic studies to be identified (ZUMPT, 1965; GUIMARÃES et al., 1989; GUIMARÃES; PAPAVERO, 2000). Therefore, the no report of causative species and/or non-specific descriptions of causative species (“other species”) leads to the hypothesis that in both the CW and ER, withdrawn larvae are generally discarded and not identified. Favoretto et al. (1994) reported four clinically exuberant cases of oral myiasis attended in this institution, which responsible species were *Cochliomyia hominivorax* (Coquerel) and *Lucilia sericata* (Meigen), both included into the family Calliphoridae. These species are commonly responsible by respectively primary and secondary myiasis on human in the Neotropical Region (GUIMARÃES et al., 1989; GUIMARÃES; PAPAVERO, 2000). Hence, these fly species would be among those species responsible for myiasis cases here described as caused by “other species”.

The results presented here on the where patients resided (rural or urban area) were influenced by the fact that most HCUFU patients live in urban areas. Therefore, it is assumed that the proportion of myiasis cases in rural community is larger than presented here. Considering that withdrawing *D. hominis* larvae is not a very difficult procedure, even though performed without medical help, the reports on patients that were unsuccessful on withdrawing *D. hominis*, would be showing how common this practice is.

The great number of occurrences in children who are zero to five years old could be partially due to the poor social conditions many of them live in and the consequent difficulties their families have to be able to prevent them from diseases such as these.

The presence of natural cavities on the head and the fact that they and the upper members of the body are rarely covered during the day in this geographical region regardless of the season could explain the high occurrences of myiasis on these areas of the body. Most myiasis cases occurred in the hottest and moistest period of the year, when the populations of flies increase in Uberlândia (CARVALHO *et al.*, 1991). The exposure of the body areas to flies, other than the ones mentioned above, could be due to people wearing shorter clothes in the hottest months. Furthermore, the increase of visitation to rural spots for leisure could also influence the increase of myiasis cases in this period of the year, mainly those caused by *D. hominis*, because it is primarily a forest-dweller insect and the majority of its vectors occurs in forests and rural areas (GUIMARÃES; PAPAVERO, 2000).

Many associated aspects to myiasis discussed here are likewise related to both regional and worldwide literature about this issue (ZUMPT, 1965; GUIMARÃES *et al.*, 1989; HALL; WALL, 1995; GUIMARÃES; PAPAVERO, 2000). The possible association of myiasis with Hansen's disease and Diabetes may be highlighted. People who get these diseases can hurt themselves easier and their injuries usually heal slower (MARBLE *et al.*, 1985; SRINIVASAN, 1994). Because of this, they could become more susceptible to myiasis caused by "other species". Illnesses or situations that keep people immobilized during the day are other factors that also could increase their susceptibility to myiasis (ZUMPT, 1965; SMITH; CLEVINGER, 1986). Pneumonia and alcoholism are examples of illnesses that could lead people to it either. Finally, despite the limitations of the data here presented, it was possible to visualize epidemiological aspects associated to these parasitosis as well as to make inferences about the seasonal distribution of myiasis caused by *D. hominis* and by "other species" of flies in Uberlândia.

RESUMO: A partir de uma análise retrospectiva, são descritos aspectos epidemiológicos de miíases humanas diagnosticadas no período de Janeiro 1986 a fevereiro de 1997 em um hospital escola de Uberlândia, Estado de Minas Gerais. Foram analisados 431 prontuários médicos e incluídos no estudo 222 casos de miíases (51,5%), cujos atendimentos foram feitos no ambulatório (51,5%) e no pronto socorro (40,1%). As miíases ocorreram mais freqüentemente em pacientes do sexo masculino (64%). As miíases em crianças e adultos jovens até um, cinco e vinte anos representaram respectivamente 11,7%, 30,1% e 53,1% dos casos. Em 66 (29,7%) prontuários, os diagnósticos indicaram miíase causada por *Dermatobia hominis*. Não havia registro de espécies responsáveis pelas miíases nos prontuários remanescentes. O número de casos de miíases aumentou no período de outubro a abril (período mais quente e úmido do ano em Uberlândia). São discutidos aspectos físicos, econômicos, sociais e culturais que parecem estar associados a miíases humanas em Uberlândia.

UNITERMOS: Miíases humanas, Epidemiologia, *Dermatobia hominis*.

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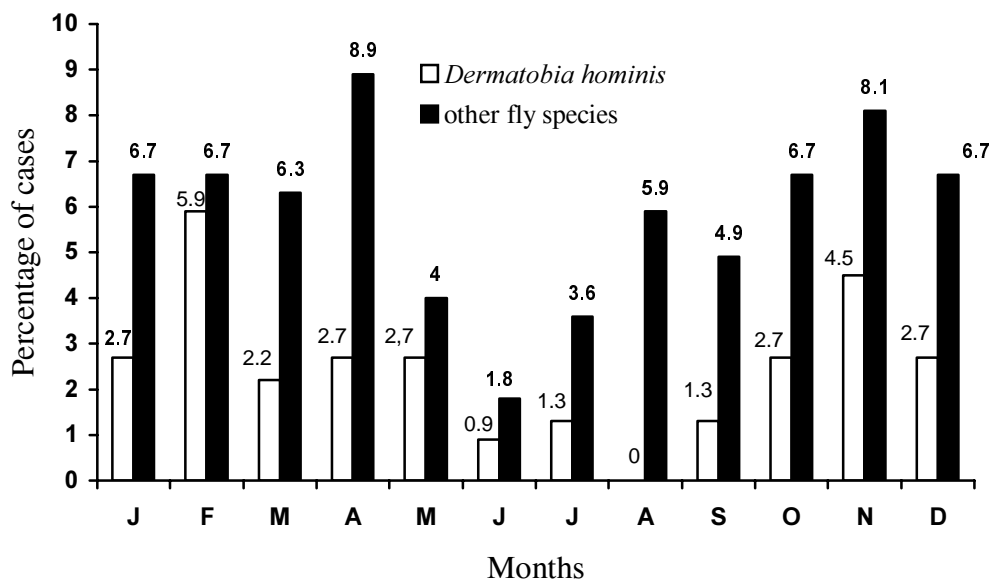
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Table 1: Myiasis cases according to aged groups and sex treated in a teaching hospital from january 1986 to february 1997 in Uberlândia, state of Minas Gerais.

Aged group	sex (%)		Total (%)
	Male	Female	
0—1	14 (6.3)	12 (5.4)	26 (11.7)
2—5	19 (8.6)	22 (9.9)	41 (18.5)
6—9	21 (9.4)	11 (4.9)	32 (14.4)
10—19	11 (4.9)	8 (3.6)	19 (8.5)
20—39	26 (11.7)	6 (2.7)	32 (14.4)
40—59	26 (11.7)	7 (3.1)	33 (14.8)
≥ 60	16 (7.2)	9 (4.0)	25 (11.2)
N/ deter.	10 (4.5)	4 (1.8)	14 (6.3)
Total	143 (64)	79 (36)	222 (100)

Table 2: localization on the body of 222 cases of myiasis treated in a teaching hospital from January 1986 to February 1997 in Uberlândia, state of Minas Gerais.

Body areas	Number of cases	%
Head		
Oral cavity	2	0.9
Nasal cavity	16	7.2
Ears	30	13.5
Ocular region	37	16.7
Scalp	45	20.3
No determined	25	11.3
Sub-total	155	69.9
Torso		
Genitals	5	2.3
Other areas	24	10.8
Sub-total	29	13.1
Limbs		
Upper	9	4.0
Lower	26	11.8
Sub-total	35	15.8
No determined	3	1.3
Total	222	100

**Figure 1:** Monthly percentage distribution of 222 myiasis cases attended in a teaching hospital from January 1986 to February 1997 in Uberlândia, State of Minas Gerais.