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Research Article

Epidemiological Behavior of Leishmaniasis in the Municipality of Choloma, Department of Cortés, Honduras, 2016 - 2018

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Abstract

Background: Leishmaniasis; which is an infectious disease, its vector being the Lutzomyia mosquito. Which is more common in tropical countries.

Objectives: To determine the epidemiological behavior of leishmaniasis in the Municipality of Choloma, Department of Cortés, Honduras, 2016 - 2018.

Methodological Design: Descriptive cross-sectional study, carried out in Choloma, Department of Cortes, Honduras. Universe of 104 files with a confirmed diagnosis of Leishmaniasis, with a type of non-probabilistic convenience sample, including patients with Leishmaniasis, complete files and with a population of legal age; All files were analyzed, extracting the variables of interest. The statistical software SPSS V21 was used. Using the Microsoft Word package to export tables and graphics. At an ethical level, this study was considered low-risk, the researchers of this study approved the WHO course on good clinical practices in research with human beings.

Results: It was observed that the most incident group were those over 41 years with 35% (37) and men in 81% (84), the Primary obtained first place with 73% (76), being a farmer the predominant occupation with a little more than 50% (54) and coming in 85% (89) from rural areas. The Ulcerated Cutaneous Type Lesion obtained 72% (75), The Single Lesion obtained 84% (87) with a predominance of appearance on the Face and Neck in 46% (48) and a Clinical Evolution in Time of 0 - 3 months in almost 95% (98). The discharge condition was favorable in 97% (101).

Conclusion: Men between 11 - 20 years old, from rural areas, with little or no education, are the most affected. The behavior of the pathology is summarized in ulcerated cutaneous areas of the face and neck.

Keywords: *Leishmaniasis; Black Fever; Honduras; Epidemiology*

Introduction

Leishmaniasis; which is an infectious disease caused by a protozoan called *Leishmania* sp. Its vector is the *Lutzomyia* mosquito. Nowadays, the disease is most frequently observed in countries with tropical climates [1].

Clinically, moderate to high fevers may be observed, accompanied by stiffness and chills that may last up to several weeks; splenomegaly, hepatomegaly, lymphadenopathy and hyperpigmentation are also present, more frequently in dark-skinned subjects [2].

According to the World Health Organization and the Pan American Health Organization, by 2019 this pathology presented almost 1 million new cases at the cutaneous and mucosal level, being reported by 17 of the 18 endemic countries [3].

More than 90% of visceral leishmaniasis cases occur in five countries: Bangladesh, India, Nepal, Sudan, and Brazil; nearly 90% of mucocutaneous leishmaniasis cases occur in three countries: Bolivia, Brazil, and Peru; and 90% of cutaneous leishmaniasis cases appear in seven countries: Afghanistan, Saudi Arabia, Brazil, Algeria, Iran, Peru, Paraguay and Syria [4].

Its annual occurrence is 2 million cases and, of these, 1.5 million belong to cutaneous leishmaniasis, 15% correspond to pediatric age, under 14 years of age. Currently, there are about 88 affected countries, of which only ten are developed [5].

When comparing past years, there were approximately 50,000 cases reported, however, since 2016 there has been an increase in the number of cases in the American region. The data of this pathology are in constant development by the national programs of infectious diseases, nevertheless, to be this the case, it is decided to analyze this incidence in the Department of Cortes, Honduras [6].

Methodological Approach

A cross-sectional descriptive study was performed in the municipality of Choloma, Department of Cortes, Honduras. With a total of 104 files with a confirmed diagnosis of Leishmaniasis, with a non-probabilistic convenience sample, taking the sample in its entirety to achieve a significant result of the sample. Including patients with Leishmaniasis, complete files, and with population over age; excluding incomplete files and diagnostics that are not very clear about the existence of the initial pathology.

All the files were analyzed, extracting the data of interest. Consequently, the SPSS V21 statistical software was implemented. The Microsoft Word package was used to export tables and graphs. At the ethical level, this study was assessed as low risk, since no tests were performed that caused pain or placed the participating patients at psychological or social risk; it should be emphasized that the researchers in this study approved the World Health Organization's course on good clinical practices in research with human beings.

Results

According to the data collected in the field, it could be observed that the most incident group were those older than 41 years with approximately 35% (37) of the total number of cases, likewise, men in 81% (84) were the most affected. At the educational level, primary school was the first with 73% (76), being farmer the predominant occupation with a little more than 50% (54) and 85% (89) coming from rural areas (See table 1).

Age	**F**	**%**
11 - 20	27	26.9
21 - 30	23	22.1
31 - 40	17	16.3
Older than 41	37	34,7
Total	104	100
Sex	**F**	**%**
Male	84	81
Female	20	19

Total	104	100
Scholarship	**F**	**%**
None	14	13.6
Primary	76	73
High School	14	13.4
Total	104	100
Occupation	**F**	**%**
Farmer	54	52.9
Student	15	15.3
Homemaker	13	12.5
Operator	8	7.6
Others	14	14.4
Total	104	100
Residence	**F**	**%**
Urban	15	14.4
Rural	89	85.6
Total	104	100

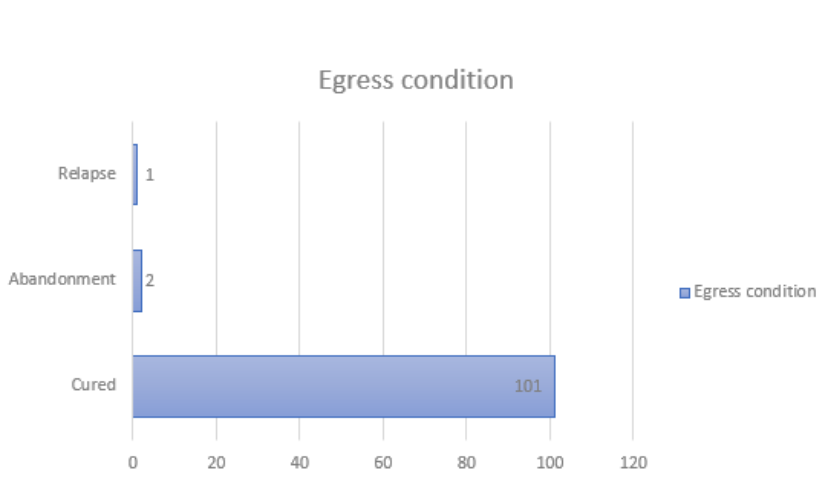
Table 1: *Distribution of sociodemographic variables (n = 104).*

Factors of interest that were taken into account as clinics, determined that the Ulcerated Cutaneous Type Lesion obtained 72% (75) of the total cases, on the other hand the Single Lesion obtained 84% (87) with a prevalence of appearance in Face and Neck in 46% (48) and a Clinical Evolution in Time from 0 - 3 months in almost 95% (98) of the total of the cases (See table 2).

Injury type	**F**	**%**
Cutaneous Ulcerated	75	72
Cutaneous Non Ulcerated	28	27
Mucocutaneous	1	1
Total	104	100
Type of Injuries according to Number	**F**	**%**
Single	87	84
Multiple	17	16
Total	104	100
Injury Location	**F**	**%**
Face and Neck	48	46.1
Upper Limbs	42	40.4
Lower Limbs	10	9.7
Chest	4	3.8
Total	104	100
Time of Injury Evolution	**F**	**%**
0-3 months	98	94.2
4-6 months	2	1.9
Over 7 months	4	3.9
Total	104	100

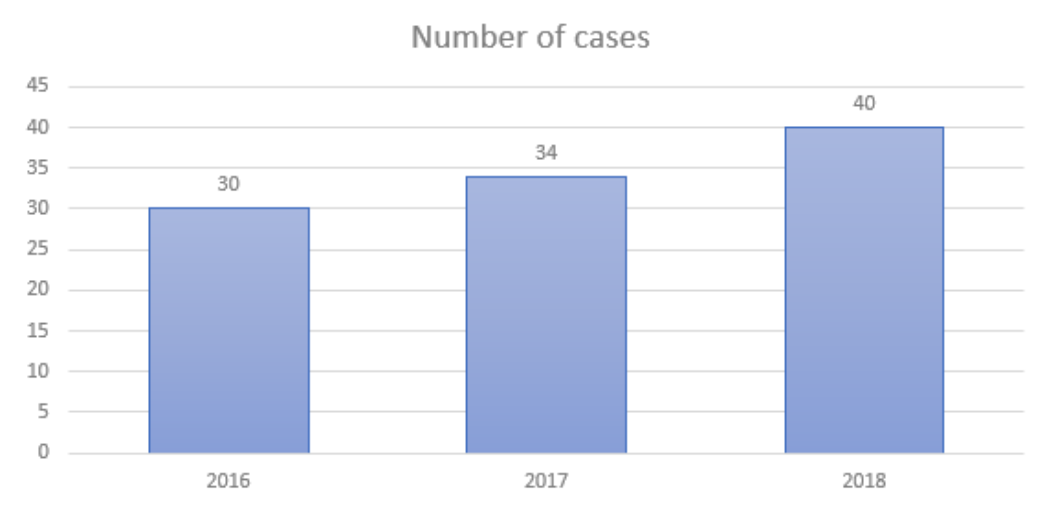
Table 2: *Distribution of clinical characteristics identified in the subjects under study (n = 104).*

The discharge condition was favorable in 97% (101) of the total number of the cases, followed by abandonment of medical follow-up in only 2% (2) and relapse in 1% (1) (See graph 1).



Graph 1: *Exit status of the subjects under study (n = 104).*

According to the numbers of cases in a span of three years has had a significant increase of at least five more cases per year, with the lowest being 30 for 2016 and the highest being 40 cases for 2018 (See graph 2).



Graph 2: *Number of cases reported according to years between 2016 - 2018 (n = 104).*

Discussion

In 2015 in Colombia, Baquero., *et al*. found that the most affected were men (99.4%). With these results, it is confirmed that men are the most affected by this pathology due to their direct exposure in the workplace and the fact that the vector by nature is located in rural areas. Data mentioned by Izaguirre González., *et al*. in 2017 in Honduras where he found that the most affected age group was the young adult 20 - 39 years (37.8%). These findings showed that the most affected age group is 11-20 years old because most adolescents start working at a very young age and generally most of them are engaged in agriculture, added to the lack of knowledge and poor practice of disease prevention measures [7,8].

It is evident that 53.8% of the patients studied have completed primary school and generally in these places they only have 6 academic grades added to this the shortage of economic resources makes it difficult for them both to enter a school unit and to move to the city in search of better opportunities. This coincides with the findings mentioned by Diburga Del Águila Camila in 2016 in Peru, where it was found that 21% of the patients are involved in agriculture. With this data, it became evident that 52.9% of the patients are farmers, areas where the only source of labor in agriculture, the distance between one sector and another is long (3 - 4 hours) added to this the lack of permanent transportation, which makes it harder for them to move to the city [8,9].

Águila Camila in 2016 in Peru where the predominant injury was ulcerated skin. With these values, it is reported that 72% of the patients present ulcerated skin lesions since the most affected anatomical location in this kind of lesions in the exposed areas, in addition to the rapid progression of the ulcer size. This study is in agreement with the data mentioned by Risco Oliva., *et al*. in 2009 in Honduras, where he found a predominance of single lesions (53%). Based on these results, it was observed that the single lesion predominates in 87% of the patients because in most of the ulcerated skin lesions the number of lesions is unique because of the quick progression [10].

This research differs from the data mentioned by Puentes Baquero., *et al*. in 2015 in Colombia where it was found that the lesions were located more frequently in the upper limbs (60.8%). With the obtained results, it is said that the lesions are located more frequently in the face and neck (47.1%). This study is consistent with the data mentioned by P. Giavedoni., *et al*. in 2015 in Spain where he found that most patients had an average time of evolution before a diagnosis of 3 months. With these outcomes, it is clear that the time of evolution of the lesion most frequently is 0 - 3 months in patients which is related to the type of lesion present in the studied population [11,12].

This research is in agreement with the data mentioned by Olivera Guerra., *et al*. in 2015 in Brazil, who observed that 76.2% were men and 3.3% of the lesions were mucosal. With these values, it is asserted that the most common type of lesion is the ulcerated cutaneous lesion, which is more predominant in men due to the features of the place of residence and the type of studied population. This study diverges with the data presented by Izaguirre González., *et al*. in 2017 in Honduras where it was found that 100% of the patients had a good treatment response. The obtained results showed that the vast majority of patients had a good treatment response (97%) [13].

This study differs from the data cited by Puentes Baquero., *et al*. in 2015 in Colombia where 95% of patients were treated with one to four cycles of treatment. With the obtained data, it was evidenced that 100% of women have a better treatment response and this is since women are generally more disciplined and take better care of their health. This research differs from the data mentioned by Izaguirre González., *et al*. in 2017 in Honduras where it was found that 100% of the patients had good treatment responses. With the obtained results it was evidenced that there is a good treatment response in thorax lesions since this area is the least exposed to the vector, added to this the discipline of the patients to the drug application [14].

Based on these results, it is evident that there is an increase in the number of cases in 2018, which means that even though patients are arriving spontaneously at the health establishment, an active search is not being carried out. This study differs from the data reported by Diburga Del Aguila Camila in 2016 in Peru where it was found that 24% of the cases were reported in the month of October. From the

results obtained, it was evidenced that the highest frequency of case notification was in September and November due to the climatic changes experienced in these months, being this the natural vector habitat [15].

Conclusion

It was found that most of the patients analyzed were males between the ages of 11 - 20 years and from rural areas, and with low or no education. The behavior of the pathology is summarized in that the most frequent presentation is ulcerated skin in face and neck areas. On the other hand, the single lesion and with an evolution of less than three months. A good treatment response was also observed with a minimum rate of recurrence and dropout. For the period of 2018, an increase in the notification of cases was noted.

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