Chapter 128

Leprosy in adults in the metropolitan region of Belém: analysis of the classification of the degree of physical and operational disability

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ABSTRACT
The current study aimed to analyze clinical data on the classification of the degree of physical and operational disability of the disease in the state of Pará, specifically the Metropolitan Region of Belém (RMB) among adults aged 20-50 years in the period from 2016 to 2020 to obtain information about the disease. The aim of this study was to understand their behavior and provide updated data to healthcare professionals. It has a descriptive, indirect, observational and retrospective character through data obtained from the Ministry of Health website. Leprosy is a public health problem in Brazil, it stands out almost exclusively in developing countries. There was a higher prevalence of diagnoses of grade 0 classification and multibacillary operational classification of the disease in the four years studied and in all municipalities. Through this research, we sought to collect information about the infection in question, in order to inform how the numbers of this pathology have an impact on the quality of life in the State of Pará and the importance of combating it for the improvement of the health conditions of the local population.

Keywords: Leprosy, Family Health Strategy, Communicable diseases.

1 INTRODUCTION

Leprosy, a chronic infectious disease caused by Mycobacterium leprae, mainly affects the skin, the peripheral nerves, the mucosal surfaces of the upper respiratory tract, and the eyes. It is known to occur at all ages, from early childhood to old age. The disease evolves in a chronic manner, and may have periods of aggravation called flares. It is potentially disabling and, although curable, its diagnosis causes great psychosocial impact (Azulay, 2013; Cruz et al., 2019).

This psychosocial repercussion occurs precisely because it is a pathology mirrored as an emblem of stigma, discrimination, and prejudice by society for a long time, despite the current knowledge and

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widespread approach on the subject. Added to the fact that the sick individual himself suffers social withdrawal, shame of himself and fear of dying (Souza & Martins, 2018).

The incubation period of the disease bacillus after invading the body is 2 to 5 years. The infected individual, depending on the natural resistance, can develop one of several forms of the disease (Bogliolo, 2011). According to the World Health Organization (WHO), patients are classified into paucibacillary (PB - with 1 to 5 skin lesions, with no demonstrated presence of bacilli on smears) or multibacillary (MB - with more than five skin lesions; or with nerve involvement; or with the demonstrated presence of bacilli on a skin smear, regardless of the number of skin lesions) (Cruz et al., 2019).

This bacterium is transmitted by the respiratory tract and it is estimated that the majority of the population has a natural defense against M. leprae. Susceptibility to M. leprae is believed to be genetically influenced. Thus, family members of people with leprosy are more likely to get sick (Ministério da Saúde, 2017).

In a historical context, leprosy was identified in the year 1873 by scientist Armauer Hansen and is one of the oldest diseases, with cases recorded over 4000 years ago in China, Egypt and India (Ferreira, 2019). The disease was formerly called Leprosy and goes back to the idea of impurity and filth, contained since the biblical writings and in the exclusion ceremonies of the Middle Ages. Leprosy was in Brazil, during practically the entire 20th century, the target of attention that elected it as one of the great national 'mazelas', according to sanitarists in the 1910s (Ferreira, 2019).

However, in 1995, as an attempt to minimize the stigma of prejudice attributed to the disease, the term leprosy was replaced by leprosy and made official in the country, by Law No. 9.010, March 29, 1995 (Lopes et al., 2020).

According to determinations, the diagnosis and case definition of leprosy for treatment presents one or more of the following findings: skin lesion with altered sensitivity, nerve trunk thickening, and positive skin smears (Faria & Calábria, 2017; Santos & Ignotti, 2020).

Moreover, the specific treatment for people with leprosy given by primary care is the multidrug therapy (MDT) standardized by the World Health Organization. The MDT consists of a combination of the following drugs: rifampicin, dapsone and clofazimine, administered in association, with a differentiation of a supervised monthly dose of rifampicin taken every 6 months for PB cases and a supervised monthly dose of rifampicin taken every 12 months for MB cases. In addition to the MDT drugs, measures such as early diagnosis, prevention and the treatment of physical disabilities are currently carried out by health units (Ministério da Saúde, 2017).

Seen from the national picture, such infection is closely related to unfavorable economic, social, and environmental conditions. The disease is only considered endemic in countries where the prevalence is higher than ten cases per 100,000 inhabitants. Brazil is one of these countries (Cruz et al., 2019).

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According to the WHO the country ranks second in the world in the number of leprosy cases, second only to India. In 2017, in Brazil, 26,875 new cases were detected, which expresses 12.9 cases per 100,000 inhabitants (WHO, 2019). In the country, what is observed is that, although there is a commitment to eliminate leprosy, regional disparities result in the maintenance of the circulating disease. The large Brazilian territorial extension and socioeconomic inequalities between regions have been pointed out as the main reasons (Ribeiro, Silva & Oliveira, 2018).

According to the Agência Brasil website, the largest number of new cases identified in the last decade is in the Northeast Region, followed by the Midwest, North, Southeast, and South of the country. Given this scenario, Brazil is classified as a country with a high endemic record for the disease (Rodrigues et al., 2020).

At a regional level, according to the Ministry of Health, Pará was fourth in number of people with leprosy in 2015, presenting the overall detection rate of new cases at 35.2/100,000 inhabitants (Cunha et al.., 2019; Neves et al., 2017). In the municipality of Belem, as in the entire Amazon Region, leprosy is more common in places with low quality of life. Thus, the disease has presented a high endemicity pattern" (Gonçalves et al., 2018). In this state, the regions with the highest risks are the Southeast and Center-South, probably, as some researchers refer due to the construction of the BR-153 highway (Rodovia Belém-Brasília), started in the 1970s and considered an important advance for the expansion of the agricultural frontier in Brazil (Rodrigues et al., 2020).

With the pandemic of COVID-19 in the country, it was noticeable the prioritization of care and actions focused on cases of the new coronavirus, and the decrease in demand and even screening of dermatological symptomatic cases of Leprosy in public health units (Silva et al., 2021; Veras er al., 2020).

Considering that leprosy is a public health problem, the current study aimed to analyze clinical data from the classification of the degree of physical and operational disability of the disease in the state of Pará, specifically in the Metropolitan Region of Belém (RMB) among adults aged 20-50 years in the period from 2016 to 2020, in order to acquire a theoretical framework about the disease, with the intention of bringing to health professionals proposals for preventive actions against leprosy among the residents of the area.

2 METHODOLOGY

The work was conducted through a survey of data in DATASUS of leprosy in the RMB (comprises municipalities of Belém, Ananindeua, Marituba, Benevides and Santa Bárbara), in the State of Pará, between the years 2016 and 2020. Variables were included such as: physical disability and the operational classification of the municipalities in the last 5 years.

It was not necessary to use the Informed Consent Form (ICF) nor to submit it to the CEP because it is a descriptive study of existing data in public databases. Furthermore, the Consent Term for Data Use (TCUD) was not essential, since this was a review of data from the Ministry of Health.

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3 RESULTS

After collecting data, in all the municipalities, regarding the evaluation of the degree of physical disability, the predominance of Grade 0 was found, as shown in Table 1.

Table 1: County of physical disability notification and assessment from 2016 to 2020.

Município	Branco	GRAU 0	GRAU 1	GRAU 2	Não avaliado	Total
Ananindeua	3	192	55	26	26	302
Belém	3	656	317	73	131	1180
Benevides	2	37	21	9	2	71
Marituba	18	1242	614	318	22	2214
Santa Bárbara do Pará	0	6	5	1	1	13

Fonte: DATASUS.

With regard to the operational classification of each municipality notified, the majority were of the multibacillary form, as shown in Table 2.

Table 2: Reporting municipality and current operational classification from 2016 to 2020.

Município	PAUCIBACILAR	MULTIBACILAR	Total
Ananindeua	65	237	302
Belém	303	877	1180
Benevides	10	61	71
Marituba	248	1966	2214
Santa Bárbara do Pará	3	10	13

Fonte: DATASUS.

4 DISCUSSION

The leprosy cases in the RMB can be attributed to the high demographic density and the existence of better health referral centers in the area, which favors the detection of new cases, as well as the management and maintenance of all patients registered in the SINAN.

These data analyzed, in the period from 2016 to 2020, focused on the peculiarities of the municipalities that influence the expression of leprosy, since the population, in economic situation and precarious housing conditions, shows a greater spread of the disease.

The hot and humid climate of the state, the geographical location in the Amazon forest, which is an endemic region for some diseases, and the great territorial extension of the state are some factors that influence the appearance of the disease. The socio-economic level of the population related to the low educational level are aggravating factors for the development and the high number of cases of the disease in the state, considering that in Pará there are groups that have less access to treatment due to geographical and/or territorial difficulties, such as the indigenous, riverine, and maroon populations, which contributes to the significant number of cases among the population of Pará.

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It is important to know not only these peculiarities, but also to understand the clinical behavior reported in these municipalities. In this regard, the Joint Ordinance 125/2009 of the MS highlights the issue of disease classification regarding the degrees of physical disability that must be assessed at the time of diagnosis of leprosy and/or the reactional state. For this, it is necessary to test the sensitivity of eyes, hands and feet by using the Semmes-Weinstein set of monofilaments (6 monofilaments) for hands and feet and dental floss for the eyes.

As for this classification, grade 0 means that there is no change with the eyes, hands, and feet; grade 1 refers to reduction or loss of sensation in the eyes, hands and/or feet; and grade 2 when there is lagophthalmos and/or ectropion; trichiasis; central corneal opacity; visual acuity less than 0.1 or inability to count fingers at 6 meters distance, trophic lesions and/or traumatic lesions in hands and feet with claws, fallen hand or foot, ankle contracture (Ministério da Saúde, 2009).

The MS considers the detection coefficient of new cases diagnosed with grade 2 disability as an important parameter to be analyzed. According to the DATASUS tables, in most of the municipalities covered in the RMB, the numbers of the disease in grades 0 and 1 stand out. This variation is fundamental because it shows that people in grade 1 have higher coefficients of improvement and cure of the disease, therefore, somehow the diagnosis has still been early. The North region stood out as the only one that showed an increase in the coefficient, from 1.76 in 2005 to 1.83/100,000 inhabitants in 2015 (Ribeiro et al., 2018); in this study, it ratifies how different from the other regions of the country.

Despite the diagnosis occurring more quickly, regarding the operational classification, a predominance of the multibacillary forms was found in the cities of the RMB. This greater propensity is an indicator of a prolonged time of illness and a greater possibility of transmission in the community, denoting less adherence to the therapeutic service provided by the SUS by patients or even a reduction in the active search for treatment and monitoring of patients by the team of health professionals in basic units.

These data show that the government management needs to be attentive to the programmatic actions against leprosy, especially in endemic municipalities, in order to recruit the workers in the basic network to help eliminate this pathology.

The study by Garbelini et al. in 2020, in the state of Goiás, disagrees with the present research, because there was a preponderance of 3.8 times of people infected with the paucibacillary form (400% in relation to the multibacillary form) and 4.3 times in 2018. The work of Santos et al. (2017), in the state of Mato Grosso, as well as Bucater and Carmo Dias (2020), in São Paulo, found similar data to the present research.

It is interesting to mention that when analyzing the notifications per year in isolation, it was observed in the last year 2020, the number of reported cases reduced almost by half in the municipalities of the RMB and, possibly, this is due to the pandemic experienced from covid 19, which allows us to infer that it directly affected the active and passive search for early diagnosis of leprosy because many users of UBS may have

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avoided going to the units for reasons of social isolation and even restrictive lockdown measures to contain the growing advance of the pandemic. In addition, many professionals may have focused on early diagnosis of people infected with the coronavirus, which may have made them "forget", temporarily, other typical diseases of the Pará region.

Thus, during the analysis of leprosy cases reported over the past five years, there was a need to improve the activities of health promotion and prevention, especially because this evidence showed greater vulnerability in the detection of cases, signaling a possible underreporting of leprosy by the training of health professionals. Moreover, it should be considered that these factors influence the diagnostic time of the patient, and consequently his treatment because the question of diagnostic time is essential for the evolution of the pathogen and thus cases of the clinical form of the disease.

These findings should inspire future similar or more detailed studies to alert the community, governments, and various segments of society about the importance of this disease, long considered "impurity" and causing insurmountable stigmas to patients.

5 CONCLUSION

It is concluded that this disease, during the last 5 years, in the RMB, had a higher prevalence of diagnoses of degree of physical disability 0 or 1 of the disease and of multibacillary operational classification. In view of this, it is important to emphasize how necessary it would be a greater interaction of health professionals with the community, to the extent that lectures and collective orientations should occur, in order to guide patients about the disease, in addition to developing awareness measures about prevention and treatment, bearing in mind that this affliction deserves increased attention due to several deleterious consequences.

Thus, through this research, we sought to gather information about the infection in question, in order to inform how the numbers of this pathology impact the quality of life in the state of Pará and the importance of combating it to improve the health of the local population. Similar studies are important to change the still existing dynamics of the pathology.

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