Leprosy patients profile registered in the university clinical center in Patos de Minas

Perfil dos pacientes cadastrados com hanseníase no centro clínico universitário em Patos de Minas

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ABSTRACT: Leprosy is an infectious contagious disease caused by *mycobacteriumleprae*, it manifests mainly through dermal and neurological signs and symptoms. This study aims to describe the clinical and epidemiological profile of leprosy infected patients registered in the university clinical center. An interview script was elaborated for 33 patients relative to their socioeconomic, demographic, environmental and clinical conditions. The majority of studied patients were adults (61.7 years old in average), brown skin, males, poor education, economically active and were all classified with low income. From the many forms of the disease, the most prevalent was dimorphic with multibacillary operational classification. Physical incapacity of level 0 predominated with 66.7%. Among the factors that determine bigger health risks, it is included declining age and low socioeconomic condition. The multibacillary predomination demonstrates the importance of early diagnosis and appropriate treatment, since it is a more aggressive form of the disease that combined with treatment reactions is an important cause of physical incapacity leading to work absenteeism.

Keywords: Leprosy; Leprosy, borderline; Leprosy, multibacillary/diagnosis; Socioeconomic planning; Brazil/epidemiology.

RESUMO: A hanseníase é uma doença infectocontagiosa causada pelo *mycobacteriumleprae* e se manifesta principalmente através de sinais e sintomas dermatoneurológicos. O objetivo do estudo foi descrever o perfil clínico e epidemiológico dos portadores de hanseníase cadastrados no centro clínico universitário. Foi elaborado um roteiro de entrevista para 33 pacientes referentes às condições socioeconômicas, demográficas, ambientais e clínicas. A maioria era adultos, (média de 61,7 anos), pardos, sexo masculino, baixa escolaridade, economicamente ativos, todos classificados como baixa renda. Entre as formas da doença, a mais prevalente foi a dimorfa com a classificação operacional multibacilar. A incapacidade física de grau 0 predominou com 66,7%. Dentre os fatores que proporcionam maior risco à saúde, inclui-se a idade avançada e a baixa condição socioeconômica. A predominância multibacilar demonstra a importância do diagnóstico precoce e tratamento adequado por se tratar de caráter mais agressivos, que juntamente com as reações são importantes causas de incapacidade física, acarretando absenteísmo do trabalho.

Descritores: Hanseníase; Hanseníase dimorfa; Hanseníase multibacilar/diagnóstico; Planejamento socioeconômico; Brasil/epidemiologia.

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INTRODUCTION

Leprosy is an infectious contagious disease caused by *Mycobacterium leprae*, with slow evolution, and it manifests mainly through dermal and neurological signs and symptoms on the eyes, hands and feet[1, 2]. Brazilian Ministry of Health classifies leprosy as undetermined, tuberculoid, dimorphic and virchoviana, being respectively the two first forms paucibacillary (few bacilli present) and the two last multibacillary[3].

The *Mycobacterium leprae* does not target only the skin, but also the peripheral nervous system, causing loss of sensibility, atrophies, paresis and muscular paralysis which, if not early diagnosed and treated, may evolve into permanent physical incapacity, this makes leprosy a disease with great importance in public health[4].

According to the World Health Organization (WHO), 94% of leprosy cases notified in 2014 belonged to 13 countries, group in which Brazil is included. Furthermore, this organization informs that together, Brazil, India and Indonesia notify more than 10,000 new patients/year, representing 81% of recently diagnosed patients notified worldwide[5].

Brazil stands in second place of world leprosy prevalence in relation to new cases, and regarding to the Americas it is responsible for more than 92% of registered cases[6]. The WHO advocates leprosy elimination goal as less than one case for each ten thousand inhabitant. Brazilian population presented a prevalence coefficient of 1.56 cases per 10,000 inhabitants in 2010[7]. Later in 2016, the general detection coefficient was 12.2 cases per 100,000 inhabitants, showing a decrease from 2010 (18.2), but still classifying Brazil as a high load country for the disease. North and Midwest regions persist as endemic zones[7,8].

According to the Ministry of Health, the average coefficient values in the period from 2012 to 2016 presented male gender predominance in relation to female. Regarding the schooling level analyzed in the same period, there was a predominance of the illiterate + incomplete elementary school segment (55%). When observing the race/color of 2012-2016, brown represents 58.9%, white 26.8%, black 12.8%, yellow 0.9% and indigenous 0.4%. In this same time range, was observed that the proportion of multibacillary new cases was prevalent in male population (62.7%) and paucibacillary in female population (58.6%)[8].

Leprosy, when not precociously and properly diagnosed and treated, evolve to physical deformities and disabilities, which results in a decreased work capacity, social life limitations and psychological problems[9]. The level of disability is determined by a neurological evaluation of the eyes, hands/feet and the result is expressed in numbers that vary from 0 (zero) to II (two)[1]. Thereby, level 0 is determined when there is no eye, hands and feet disability; level 1 when there is disability (decrease or loss of sensitivity in the eyes, hands or feet) and level 2 when there is disability and deformity in the eyes, hands and feet[2]. Neural distress may occur in all forms of leprosy, showing that the evaluation and registry of disabilities are important to avoid disabilities installation during treatment[2].

In 2016 Brazil still is classified as high load for leprosy, being the second greatest incidence in the world[2]. In the state of Minas Gerais, the city of Patos de Minas occupies the 19th rank, above the goals established by the WHO[10]. Thus, the objective was identify the profile and clinical condition of these patients, aiding the community to prevent and decrease the disease incidence.

METHODS

This is a cross-sectional study, descriptive, with quantitative approach. The sample of this study was formed by leprosy carrier patients, treated in the University Clinical Center, in the city of Patos de Minas, state of Minas Gerais - Brazil, in the period from March to December of 2018. The Madrid classification (1953) defined on the VI International Leprology Congress was adopted to analyze the clinical forms of leprosy, this classification guides as clinical forms: undetermined (U), tuberculoid (T), dimorphic (D) and virchowiana (V)[1]. For data gathering, referent to socioeconomic, demographics, environmental and clinical conditions, an interview script with objective questions was utilized. Identification of physical disabilities and their level were determined through physical examining of eyes, hands and feet. This examinations complied with parameters adopted by Brazil's Ministry of Health.

The study was submitted to approval from the Research and Ethics Committee (CEP) of UNIPAM, through the co-substantiated advice number 2.512.667. The inclusion criteria were all leprosy patients who sought dermatological treatment in the university clinical center through the studied period. All of them agreed participating on the survey. The exclusion criteria were all patients referred with other diseases. Sampling was by convenience. Every arriving patient in the clinical center during the period from March to December 2018 could, in theory, participate on the sample, provided that they fulfilled the survey inclusion criteria. After active search of patients and inclusion criteria analysis, 33 leprosy diagnosed patients composed the sample of this study.

RESULTS

The disease prevalence was greater in the age range between 50 and 98 years, with an average age of 61.7 years, representing 73. Regarding gender, 76% of leprosy carriers' patients were male and 24% female.

Brown skin color predominated with 57.6%, followed by white skin patients with 39.4% and with a less percentage, black skin with 3%.

Among the occupations identified, the most frequent one was retired, 27.3%, drivers and farmers with 12%, bricklayers 4% and other occupations added up to 39.7%. The family income was in general low, with 63.7% of patients' families earning from 1 to 3 minimum wages, followed by 23.7% earning less than one minimum wage, none had an income bigger than 4 minimum wages and 9% didn't know their family income. (Figure 1).
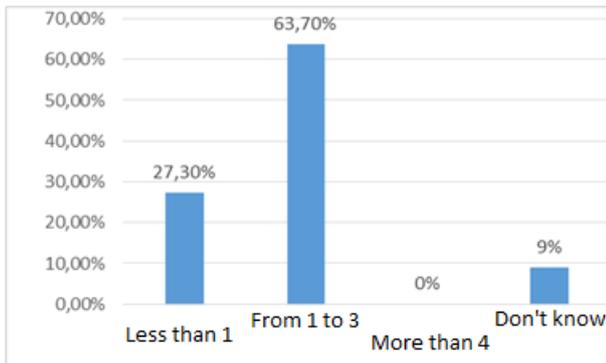

Figure 1: Income distribution of participants per minimum wage

As of educational level, in its great majority, 72.7% of patients had only completed up to elementary school, followed by 18% that completed high school and 9% were illiterate. Most patients had their homes located in urban area (88%), and only 12% lived in the countryside. Only 18.2% of patients reported leprosy cases in the family and 81.8% did not confirmed.

Among the 33 patients, 9 were undergoing polychemotherapy (PCT) and 24 suffered reaction after treatment and were receiving follow up in the specialty clinic. Regarding the clinical forms of leprosy, most patients presented the multibacillary classification, and the dimorphic form was the most prevalent, with 66.7% of cases, followed by virchowiana with 11.1%, as for the paucibacillary classification, only the tuberculoid form was found with 22.2% of cases (Figure 2).
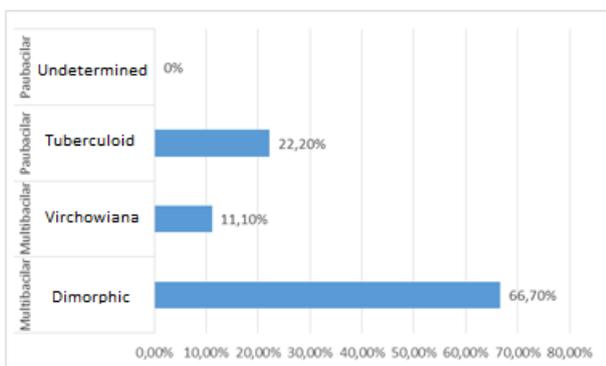

Figure 2: Distribution of leprosy clinical forms within the survey participants

The disability level of patients was evaluated according to the Ministry of Health in three levels (0, 1, 2). The levels are attributed for each hand, eye and foot, the biggest attributed number, represents the greater level of the individual disability. Analyzing the level of disability during the survey period, was found that 66.7% of patients did not had any kind of disability. But 22.2% of patients presented a level 1 disability, and 11.1% a level 2. The diseased who had shown some level of disability carried the multibacillary form, since the dimorphic form was prevalent in level 1 disability and virchowiana in level 2 (Figure 3). During PCT treatment 55.6% of patients had a type 1 reaction; 33.3% had no reaction and 11.1% had a type 2 reaction.
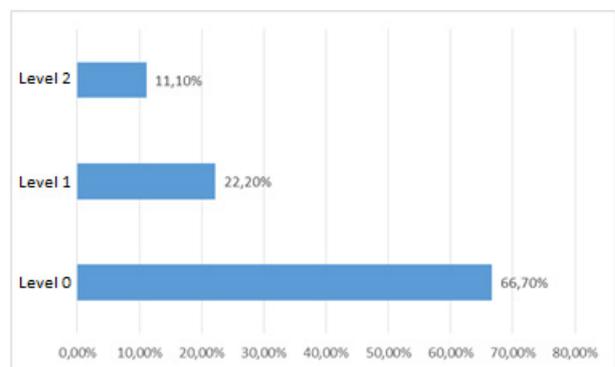

Figure 3: Physical Disability evalution of survey participants

DISCUSSION

With the intention of describing the clinical and epidemiological profile of leprosy disease carriers registered in the University Clinical Center in Patos de Minas, the present study observed that the average age range of leprosy patients was 61.7 years, this fact contrasts with other studies, in which the disease prevalence was greater among the ages of 13 to 49 years old active population[11,12,13]. Furthermore, when analyzing the disease prevalence among genders, it was found a greater preponderance on male gender (76%). As of Batista's et al.[14] study there was no significant difference among genders, unlike the WHO that reports a male gender preponderance in a 2:1 proportion. Some studies may have female gender predominance, due to lesser concern with body and esthetics from the male gender.

Regarding skin color, it was found a brown skin predominance (57.6%), followed by white skin (39.4%) and black skin (3%). This prevalence was also found in another study[15]. However, in other studies the white skin prevailed[12,13]. In this way, the region and ethnicity from where the study is conducted must be taken in consideration. Also, the brown skin color predomination

is likely due to the miscegenation history of Brazilian population.

When observing occupations, it was noted greater presence of retirees (27.3%), followed by drivers (12%), farmers (12%) and bricklayers (4%). This results contrasts with other authors who found famers and freelancers as majorities[13,16]. Yet there is a resemblance of being low paid Jobs, which explains the low income of most patients in all searched studies and also in this study. Besides that, most interviewed patients had only completed up to elementary school (72.7%). Similarly studies detected a low educational level within leprosy patients, this fact has a major importance to health education actions planning and community awareness[16,17].

When asked about cases within their families, only 18.2% of patients answered yes. However, this cases were related to the below 15 years old age range, this shows the disease high transmission capability, which often occurs, in between family members[13].

The most found classification was multibacillary with dimorphic clinical form prevalence (66.7%), followed by virchowiana (11.1%), and as for the paucibacillary classification only the tuberculoid form was found (22.2%). Otherwise, in a literature review the most prevalent form was the tuberculoid with 50.4% and operational classification was the paucibacillary with 54.3%[12]. This classification is very important, because it analyzes the number of skin lesions, allowing treatment in locations without a structure to realize a bacilloscopy.

In this study, was noticed that more than half of the patients didn't present disability (66.7%), 22.2% presented

level 1 and 11.1% level 2. The main leprosy problems occur due to the disability level caused mainly by neural lesion that limits patients' daily activities, being important to analyze the disability in the treatment period of the disease.

Leprosy reactional condition is marked by bacillus immune response, can be classified as type 1, in which occurs the exacerbation of previous lesions, or type 2, in which there is fever and erythematous nodules growth. In this present study, a great number of patients had the type 1 reaction (55.6%) and 11.1% had a type 2 reaction. In Souza's[18] study, the author shows that most part of reactions from patients were type 2 and from 118 patients in reactional condition, 66 presented the virchowiana form.

CONCLUSIONS

Leprosy is a disease that has been around for centuries, yet it is still very frequent and has a high disabling power, becoming a public health issue. Brazil still is one of the major countries with the greatest frequency of this disease. In this way, Brazilian Ministry of Health prioritizes a prevalence of less than 1 case per 10.000 inhabitants and an incidence lesser than 2 cases per 100.000 inhabitants. Patos de Minas still doesn't fits in both parameters, even with currently present polychemotherapy treatment. Besides that, most studied patients presented reactions, which causes larger periods away from work and loss of disease carriers' activities. Therefore, it is important to reassure the importance of health education to inform and enlighten the population thereby helping the early detection and appropriate treatment of the disease.

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