

Clinical-epidemiological character and degree of disability in patients with Hansen's disease in the municipality of Barbacena – MG and macro-region in the period from 2001 to 2010

Caráter clínico-epidemiológico e grau de incapacidade física nos portadores de hanseníase no município de Barbacena – MG e macrorregião no período de 2001 a 2010

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ABSTRACT

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Introduction: Hansen's disease is potentially disabling. It is an infectious and contagious chronic dermatosis caused by *Mycobacterium leprae* characterized by neurologic and cutaneous manifestations that can induce deformities and mutilations. Although curable, it is an important public health problem with increasing prevalence. **Objective:** to epidemiologically and clinically characterize leprosy in the macro-region of Barbacena - MG and determine the frequency and degree of physical incapacity of leprosy patients based on data collected in medical records. **Method:** this was a qualitative study based on the statistical description of medical records examined, paucibacillary (PB) and multibacillary (MB) comparison, and cross-sectional evaluation of 114 medical records of patients tended and recorded at SINAN. **Results:** among the reported cases of leprosy, 79.8% were MB and 20.2% PB, with an average age of 46.0 years, of predominantly male patients, with the dimorphic clinical form, with zero to five lesions, physical disability grade I, and with most evolving to cure. Comparisons between these groups showed statistical significance. **Conclusion:** multidisciplinary approaches are needed for Hansen's disease patients. Adherence to treatment combat the social stigma, reduces the incidence, and minimizes disease impact on the individual's life.

Key words: Leprosy; Leprosy/epidemiology; Leprosy/prevention & control.

RESUMO

Introdução: a hanseníase consiste em uma moléstia potencialmente incapacitante. É uma dermatose infectocontagiosa crônica, causada pelo *Mycobacterium leprae*, caracterizada por manifestações neurológicas e cutâneas que podem induzir deformidades e mutilações. Apesar de curável, é importante problema de saúde pública, cuja prevalência tem aumentado. **Objetivo:** caracterizar clínica e epidemiologicamente a hanseníase na macrorregião de Barbacena-MG e determinar a frequência e os graus de incapacidade física dos hansenianos a partir de dados coletados em prontuários. **Método:** trata-se de estudo qualitativo baseado na descrição estatística dos prontuários examinados e comparação entre paucibacilar (PB) e multibacilar (MB), de corte transversal, de 114 prontuários de pacientes atendidos e registrados pelo SINAN. **Resultados:** entre os casos de hanseníase notificados, 79,8% eram MB e 20,2% PB, com idade média de 46,0 anos, predomínio masculino, forma clínica dimorfa, com zero a cinco lesões, grau de incapacidade física I e a maioria evoluiu para cura. Entre esses grupos citados houve significância estatística quando comparadas. **Conclusão:** são necessárias abordagens multidisciplinares do paciente hanseniano. A adesão ao tratamento combate o estigma social, reduz a incidência e minimiza o impacto da doença sobre a vida do indivíduo.

Palavras-chave: Hanseníase; Hanseníase/epidemiologia; Hanseníase/prevenção e controle.

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INTRODUCTION

Hansen's disease is a potentially disabling disease. It is one of the oldest diseases whose first cases occurred in India and Africa. It is an infectious and contagious chronic dermatosis, caused by *Mycobacterium leprae*, characterized by neurological symptoms and skin alterations that can induce deformities and mutilations.^{1,2}

Although curable, Hansen's disease is still a relevant public health problem, persistent as endemic in 15 countries. Approximately 94% of all known cases reported in the Americas, and 94% of new diagnosed cases are notified in Brazil. This problem is aggravated by the fact that the disease is historically associated with stigmas, which keeps the idea of mutilating and incurable disease as a social representation that impairs the daily lives and interpersonal relationships of the ill, causing suffering that goes beyond the pain and illness strictly linked to the physical harm being of great social and psychological impact. Therefore, multidisciplinary approaches to patients are necessary, actions aimed at not only the elimination, but also the prevention of disabilities, stimulating treatment adherence and combating social stigma to minimize the disease's impact on individuals' lives.^{3,4}

Hansen's disease is insidious and often asymptomatic in the absence of reactional episodes, which explains, in many cases, delayed diagnoses. However, for not yet well-known reasons, some patients present a sub-acute inflammatory process - known as reactional states - that aggravates the clinical picture when not properly treated by causing permanent deformities. Many patients have no prior knowledge of their illness or do not notice asymptomatic cutaneous lesions, and only seek medical assistance when these reactional episodes become symptomatic.⁵

A classification for endemic disease control purposes and use of medicines and therapeutic schemes was proposed by the World Health Organization. Patients are divided into: a) paucibacillary (PB): with negative bacilloscopy and covering the indeterminate and tuberculoid forms; b) multibacillary (MB): with positive bacilloscopy and covering all dimorphic and Virchowian forms. This classification includes the varying degrees of disability, which are determined from the neurological evaluation of eyes, hands/feet, and have its result expressed in values ranging from zero to two, which will guide the treatment and provide a preventive assistance to patients.⁶

Evidences seen in various parts of the world suggest that patients improve while receiving regular support and efficient treatment, which is invariably long. A more frequent problem detected by health professionals stems from the failure to follow the treatment in a regular and systematic way. Therapeutic adhesion is not an easy behavior to be embedded in the patient's life.⁷

The treatment of Hansen's disease patients in Brazil is performed almost entirely restricted under the supervision of the Ministry of Health and is followed up by the National Hansen's disease control program.

All clinical, epidemiological, and therapeutic information on the disease are recorded in the Information System of Reportable Diseases (SINAN) aiming to provide control of treatments in each case and knowledge about variations in the characteristics of patients and treatments. The repeated study of characteristics in these patients is, therefore, desirable to detect alterations in disease manifestations in the population of Hansen's disease patients; this study can affect diagnosis, treatment, recovery, and prevention of disease.

Although this information has been collected in a standardized way for each case, such studies are not carried out frequently in the country. In particular, no study has yet been conducted on patients from the macro-region of Barbacena - MG, which comprises the population of 32 municipalities around this town.

Hence, investigations had not yet been carried out on correlations between bacillarity and some clinical and epidemiological characteristics of Hansen's disease patients detected in the same area.

Therefore, the present study presents the results of a survey on the characteristics of patients identified in this region, and verification of possible relationships between bacillarity and some of these characteristics by analyzing medical records from the SINAN.

METHOD

This was a period cross-sectional study on the epidemiological and clinical characteristics of Hansen's disease patients in the macro-region of Barbacena - MG, between 2001 and 2010, and on the relationship of the bacillarity in these patients with a selected set of variables.

The study consists in the analysis of electronic medical records of cases of Hansen's disease from the SINAN, recorded in Barbacena - in the macro-

region MG, in the mentioned period, and in the use of information taken from medical charts for the description of patients who participated in the study, and comparison of clinical and epidemiological characteristics of multi and paucibacillary patients.

The following information were collected from the medical records: year of notification, municipality identification, age, sex, race, education, identification of the municipality of residence, region, occupational identification, number of lesions, clinical form, degree of physical disability at diagnosis, bacilloscopy, initial therapeutic scheme, registered contacts, number of affected nerve trunks, current municipality, municipality of current notification, assessment of the degree of disability, current therapeutic scheme, doses of medicines, number of examined contacts, and discharge type.

PB and MB patients who presented one of the two diagnoses in the field 35 of the medical chart were considered for the purposes of analysis. Data statistical analysis was performed in the STATA 9.2 software. The study variables are the constants in the mentioned form.

The present research project was approved by the Ethics Committee under the following number 832/2010.

RESULTS

A total of 114 medical charts were recovered and included in the study among the reported cases of Hansen's disease in the macro-region of Barbacena, between 2001 and 2010. Out of these, 42 (36.8%) were residing in Barbacena and 72 (63.2%) in other municipalities in the macro-region. Out of these, 26 (29.5%) were from the countryside and 62 (70.5%) from the urban area. Females totaled 42 (36.8%), while 72 (63.2%) were males. The ages at diagnosis were distributed as: 43 (37.7%) between seven and 40 years old and 71 (62.3%) between 41 and 83 years old; the average age was 46.0 years, with a standard deviation (SD) of 16.3 years. Regarding the bacillarity at diagnosis, 23 (20.2%) were considered PB and 91 (79.8%) MB. In the studied group, 55 (53.9%) were white, 11 (10.9%) were black, and 36 (35.3%) were brown. Fifty patients (46.3%) were semi-literate, 47 (43.5%) were literate with an incomplete elementary school, and 11 (10.2%) possessed completed high school and higher education. The professional occupations were distributed as: 3 (12.5%) were construction workers, 12 (50.0%) worked

in maintenance services, and 9 (37.5%) in other services. A total of 66 were evaluated (58.4%) in the period from 2001 to 2005 and 47 (41.6%) from 2006 to 2010. The clinical form was undetermined in 12 (10.5%), tuberculoid in 10 (8.8%), dimorphic in 57 (50.0%), and Virchowian in 35 (30.7%). The number of lesions was distributed as: 40 (36.0%) presented between zero and five, 38 (34.3%) presented between six and 10, and 33 (29.7%) presented between 11 and 30 lesions. The number of affected nerve trunks in eight patients (72.7%) was from one to two and in 3 patients (27.3%) from three to five. Out of these, 35 (31%) presented grade 0; 54 (47.8%) grade I; and 24 (21.2%) grade II. Eighty-two (75.2%) individuals had established between zero and five contacts with other Hansen's disease patients, 24 (22.0%) between six and 10, and three (2.8%) between 11 and 20. The treatment consisted of PQT/PB/6 doses in 23 patients (20.2%), PQT/MB/12 doses in 85 patients (74.6%), and other schemes in six patients (5.2%).

The following data refer to the current patients' data; 16 (14.2%) reside in Barbacena and 97 (85.8%) in the macro-region. The bacillarity results are similar to those presented above. The degree of disability was distributed as: 42 (42.9%) were grade 0, 43 (43.9%) were grade I, 10 (10.2%) were grade II, and three (3.0%) were not evaluated. In the therapeutic scheme, 22 (19.3%) were being treated with MDT/PB/6 doses, 87 (76.3%) with MDT/MB/12 doses, and five (4.4%) with other schemes.

In order to better understand the relationships of bacillarity with other study variables represented by the fields in the medical charts from the SINAM, PBs and MBs were compared according to the frequency and averages of these variables. Table 1 presents a summary of these comparisons and results from the Chi-square and Fisher (F) tests verifying statistical significance.

The two groups were also compared with averages of time interval elapsed between diagnosis and treatment. PBs showed an average of 3.4 days with a standard deviation of 8.5 and MBs showed 3.5 days average and standard deviation of 12.2. The Fisher's test (F) for the comparison was 0.00 and $p = 0.953$. The averages in patients' ages at diagnosis was 39.1 and standard deviation of 18.6 in PBs and 47.7 average and standard deviation of 15.3 in MBs. The F-test was equal to 5.33 and $p = 0.023$. As for the number of medicines doses, PBs had an average of 5.8 and standard deviation of 0.5 and MBs showed 10.2 and standard deviation of 3.0. The Kruskal-Wallis test (H) was equal to 15.529 and $p = 0.001$.

Table 1 - Frequencies of the study variables' categories displayed by multibacillary and paucibacillary Hansen's disease patients

Compared characteristics	Paucibacillar		Multibacillar		X ² /F	P
	N	%	N	%		
<i>Diagnosis – Treatment interval</i>						
Same day	18	78.3	74	81.3	–	0.770
More than one day	5	21.7	17	18.7		
<i>Treatment – Last consultation interval</i>						
Same day	2	8.7	14	15.4	–	0.520
More than one day	21	91.3	77	84.6		
<i>Notification year</i>						
2001-2005	12	54.5	54	59.3	0.16	0.682
2006-2010	10	45.5	37	40.7		
<i>Municipality identification</i>						
Barbacena	7	30.4	35	38.5	0.50	0.476
Others	16	69.6	56	61.5		
<i>Age</i>						
07-40	12	52.2	31	34.0	2.56	0.109
41-83	11	47.8	60	66.0		
<i>Sex</i>						
Female	12	52.2	30	32.9	2.91	0.088
Male	11	47.8	61	67.1		
<i>Race</i>						
White	10	47.6	45	55.6	–	0.351
Black	4	19.1	7	8.6		
Brown	7	33.3	29	35.8		
<i>Education</i>						
Semi-literate	13	61.9	37	42.5	–	0.104
Literate with incomplete elem. school	5	23.8	42	48.3		
Complete high school and higher education	3	14.3	8	9.2		
<i>Identification of the municipality of residence</i>						
Barbacena	3	13.0	13	14.3	–	1.000
Others	20	87.0	78	85.7		
<i>Region</i>						
Rural	5	23.8	21	31.3	0.43	0.509
Urban	16	76.2	46	68.7		
<i>Occupational identification</i>						
Construction worker	0	0.0	3	17.6	–	0.685
Maintenance service	4	57.1	8	47.0		
Others	3	42.8	6	35.2		
<i>Number of lesions</i>						
0-5	20	90.9	20	22.4	35.8	<0.001
6-10	1	4.5	37	41.5		
11-30	1	4.5	32	35.9		
<i>Clinical form</i>						
Indeterminate	12	52.1	0	0.0	–	<0.001
Tuberculoid	10	43.4	0	0.0		
Dimorphic	1	4.3	56	61.5		
Virchowian	0	0.0	35	38.5		

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Table 1 - Frequencies of the study variables' categories displayed by multibacillary and paucibacillary Hansen's disease patients

Compared characteristics	Paucibacillar		Multibacillar		X ² /F	P
	N	%	N	%		
<i>Degree of physical disability at diagnosis</i>						
Grade 0	13	56.5	22	24.4	-	0.013
Grade I	8	34.7	46	51.1		
Grade II	2	8.7	22	24.4		
<i>Bacilloscopia</i>						
Positive	0	0.0	6	42.8	-	1.000
Negative	0	0.0	2	14.3		
Not done	1	100.0	6	42.8		
<i>Initial therapeutic scheme</i>						
PQT-6 doses	23	100.0	0	0.0	-	<0.001
PQT-12 doses	0	0.0	85	93.4		
Other schemes	0	0.0	6	6.6		
<i>Registered contacts</i>						
0-5	14	60.8	68	79.0	-	0.127
6-10	8	34.7	16	18.6		
11-20	1	4.3	2	2.4		
<i>Number of affected nerve trunks</i>						
1-2	1	100.0	7	70.0	-	1.000
3-5	0	0.0	3	30.0		
<i>Current municipality</i>						
Barbacena	7	30.4	35	38.5	-	1.000
Others	16	69.6	56	61.5		
<i>Municipality of current notification</i>						
Barbacena	3	13.0	13	14.4	0.002	0.863
Others	20	87.0	77	85.6		
<i>Evaluation of disability degree</i>						
Grade 0	14	63.6	28	36.8	-	0.172
Grade I	7	31.8	36	47.3		
Grade II	1	4.5	9	11.8		
Not evaluated	0	0.0	3	3.9		
<i>Current therapeutic scheme</i>						
PQT-6 doses	22	95.7	0	0.0	-	<0.001
PQT-12 doses	1	4.3	86	94.5		
Other schemes	0	0.0	5	5.5		
<i>Doses of medicines</i>						
Up to 10	13	100.0	11	23.4	24.89	<0.001
More than 10	0	0.0	36	76.6		
<i>Number of examined contacts</i>						
0-5	17	77.3	82	93.2	-	0.072
6-10	4	18.2	5	5.7		
11-20	1	4.5	1	1.1		
<i>Type of discharge</i>						
Healed	22	100.0	72	82.8	-	0.038
Others	0	0.0	15	17.2		

The number of lesions showed an average of 2.6 and DP = 4.0 in PBs, and 9.6 and DP = 7.2 in MBs. The H test was 22.046 and $p = 0.0001$. Among the recorded contacts, PBs showed an average of 4.1 and 3.9 DP and MBs an average of 3.3 and 2.3 DP. The H test was 0.372 and $p = 0.5419$. PBs showed an average of 2.0 and 0.0 DP in the number of affected nerve trunks and MBs showed an average of 2.4 and 0.9 DP. The H test was equal to 0.14 and $p = 0.713$.

DISCUSSION

Almost 120 medical records from Hansen's disease patients were evaluated in this study, which represents a small sample of Hansen's disease patients in the country or even the State of Minas Gerais. This amount of medical charts, however, corresponds to the total of medical charts from the macro-region in the city of Barbacena - MG, recorded between 2001 and 2010. The information was, however, sufficient to portray the clinical and epidemiological characteristics of these patients and how they are treated in the State.

The medical records from the SINAN used in this study were made available by the Ministry of Health. These records were produced by data transcription from assistance provided by a large amount of people on which the authors did not exercise any control. Therefore, the data quality is quite satisfactory because the search for inconsistencies and errors did not result in any detected problem that could compromise the analysis presented here.

The examined medical records showed that most patients reside in municipalities other than Barbacena - MG; in urban areas; were males; between 41 and 83 years of age, with overall average age of 46 years; semi-literate; maintenance service providers; with greater prevalence between 2001 and 2005; with the dimorphic clinical form, number of lesions between zero and five, with affected nerve trunks between I and II, at grade I of physical disability; number of contacts with Hansen's disease patients from zero to five; and treated with PQT/MB/12 doses. Around 80% of MB patients had the diagnosis performed on the same day, with an average of about three days; PB patients had the diagnosis performed on the next day, with an average of about three days.

The interval between treatment and the last consultation lasting more than one day was identified in over 90% of PB patients. In the MB group, nearly 15%

had this interval equal to zero. According to the year of the case notifications, the MB group was superior to the PB group between 2001 and 2005, when they totaled almost 60% of cases, whereas between 2006 and 2010 the PB group was the most prevalent, totaling almost 46%. The PB group was the most prevalent in municipalities other than Barbacena - MG (about almost 70%); in Barbacena - MG, the prevalence was higher in the MB group (38%). Females were prevalent in the PB group, totaling just over 52%, whereas males were prevalent in the MB group with 67%. The MB form was the most prevalent among white and brown individuals, about 90%; black individuals showed the PB form as the most prevalent totaling around 19%. Semi-literate patients and those with high school and superior complete education were significantly more numerous among PBs, approximately 76%, and the literate and with incomplete elementary school prevailed among MBs, 48%. Hansen's disease patients residing in Barbacena - MG were prevalent among MBs, 14%; residents from other municipalities were prevalent among PBs, 87%. A total of 76% of PBs were from urban area whereas 31% of MBs were from the countryside.

Working in maintenance service was the predominant occupation among PBs, 57%; others or unregistered professions were inexpressive. PBs showed a total average of number of lesions around three, being 90% between zero and five; MBs showed an average of almost 10 lesions, totaling 76% between six and 30. The indeterminate and tuberculoid clinical forms were prevalent among PBs, and the dimorphic and Virchowian forms were prevalent among MBs. Bacilloscopy was performed in all PBs; among MBs, an equality of positive results and number of non-performed bacilloscopy was observed. All PBs received the initial therapeutic scheme of PQT-6 doses while more than 90% of MBs needed 12 doses. MBs presented an average of three contacts with individuals with Hansen's disease patients, about 80% had contacts between zero and five; the average among PBs was four, totaling almost 40% from six to 20 contacts. As for the number of affected nerve trunks, most had between one and two trunks affected among PBs or MBs -100% in PBs and 70% in MBs.

The municipality and the current locality of predominant notifications from Barbacena - MG were among MBs, and other cities among PBs. When evaluated again, the degree of disability suggested a predominance of PBs with grade zero (about 60%). Most MBs showed grades I and II; non-evaluated patients and

inexpressive, did not even amount to 4% among MBs. The current therapeutic scheme showed little change in relation to the previously established, therefore, most PBs remained in the PQT-6 doses, approximately 95%, and MBs, for the most part, in the PQT-12 doses (94%). Regarding the doses of medicines received, all PBs received up to 10 doses, with an average of 5.8 doses; and most MBs, about 76%, received more than 10 doses, averaging 10.2 doses. The number of close contacts with Hansen's disease patients was from zero to five, most among MBs, which totaled about 90%. Among PBs, six to 20 contacts prevailed, totaling 22%. All PBs were healed, and although most MBs have been healed, more than 17% did not heal when compared with PBs. Concerning bacillarity, MBs were significantly superior to PBs at diagnosis. MBs totaled nearly 80% of the studied group, whereas PBs did not exceed 21%.

The comparison between PB and MB patients in age at diagnosis shows that the proportion of patients between seven and 40 years is higher among PBs than MBs. The average ages in the two groups also show that PBs are younger than MBs in approximately eight years. The differences between the two groups in this regard are statistically significant. This result suggests that paucibacillary is related to younger patients. A similar study found the same relationship; in another study, this relationship was defined for older patients (over 80 years old). The reason for the apparent relationship of bacillarity with age and predominance of younger PBs and older MBs may be related to an immunity variation over the years. This interpretation is consistent with the observation that the immune responsiveness of some individuals is reduced with age.^{8,9}

When the number of lesions was compared, those who showed zero to five lesions were prevalent among PBs in comparison with MBs. The averages in the two groups show that MBs are superior to PBs in approximately seven lesions. The differences between the two groups in this item are statistically significant, suggesting that MBs have more lesions. In another experiment the predominance of fewer lesions among PBs was also observed; however, most MBs did not show lesions. The possible relationship between bacillarity and number of lesions is in the bacillus pathogenicity. Thus, fewer bacilli found in the body (PB) would result in fewer lesions while the presence of lesions would be greater in those subjects with a large amount of bacilli (MB).¹⁰

The analysis of clinical forms of disease in PBs showed that the indeterminate and tuberculoid forms

prevailed. In MBs, the dimorphic and lepromatous forms were the most frequently encountered. This comparison can demonstrate statistical significance. The result was the same in their sample. The reason for these results was expected because according to the WHO current classification of Hansen's disease, PB patients are those with negative bacilloscopy covering all indeterminate and tuberculoids forms; MBs are patients with positive bacilloscopy covering all dimorphic and Virchowians forms.^{10,11}

In relation to the degree of disability at diagnosis, PBs mostly presented grade 0 in comparison with MBs, which showed predominance in grades I and II. Such difference between groups suggests statistical significance. The reduced disability found among PBs and the greater disease involvement among MBs were also recorded. The alleged relationship between bacillarity and disability generated by the disease suggests that the more bacilli are found, the more serious the disease is, and the more crippling its manifestation will be due to low resistance in the patient, which provides bacilli spread.¹²

The comparison between therapeutic schemes showed that the PQT-6 doses scheme was used in most by PBs and 12 doses by MBs. The differences in this regard between the two groups are statistically significant. Such result is relevant in another study; however, it cannot be denied that many health professionals make therapeutic mistakes when erroneously classifying a patient as MB, often due to the inaccessibility to laboratory tests. This error implies in treatments that are longer than necessary, which leads to increased patient exposure and costs to the system. This result reveals that professionals are not fully capable to differentiate PBs from MBs. The therapeutic scheme, according to the study, was adopted correctly by most patients, which resulted in increased treatment success.¹³

As for the number of doses of medicines, all PBs were treated with up to 10 doses, while among MBs most received more than 10 doses. The averages suggest that MBs received about four doses more than PBs. The differences in this regard between the two groups are statistically significant. This result was similar to those in another experiment. The reason of greater amount of doses among MBs was already expected and justified by the ideal therapeutic scheme of six and 12 doses for in PBs and MBs, respectively.¹⁴

The type of hospital discharge showed cure in all PBs and most MBs. Such comparison showed possible statistical significance. In another study, most pa-

tients, both PB and MB, who initiated treatment with a multidrug therapy also evolved to cure. The reason for such result justifies a therapeutic scheme adopted correctly, as previously reported. Although in other studies the abandonment of treatment is expressive, the same did not occur in the present study, and is probably justified by the possibility of a more effective, rational, and of limited duration treatment, which favors increased adherence and therapeutic conclusion.⁸

PBs and MBs were also compared regarding the time interval between diagnosis-treatment, treatment-last consultation, notification year, municipality identification, sex, race, education, region, occupational identification, bacilloscopy, registered contacts, number of affected nerve trunks, current municipality, municipality of current notification, current evaluation of the degree of physical disability, and number of examined contacts. These comparisons did not show important differences between the compared proportions and averages. In all these comparisons, tests showed $p > 0.05$. These results suggest that there is no significant correlation between bacillarity and each one of the studied variables. The predominance of patients from other municipalities is possibly the result of Barbacena's size when compared to the rest of the region because the population of Barbacena corresponds to less than 1/5 of the entire studied population.

It was not possible to demonstrate a relationship between bacillarity and sex in this study. Other authors have shown possible relationships between PB and the female gender despite differences between proportions of men and women, PB and MB, being at the limit of significance.¹⁰

Race, education, region, and occupational identification were not statistically significant; references to these variables regarding bacillarity were not found in the literature. However, these variables were statistically significant in other studies, although they have not been compared between PB and MB.^{9,10}

The evaluated groups appears to correspond to groups of Hansen's disease patients from the rest of the country as for bacilloscopy, number of affected nerve trunks, and current evaluation of the degree of disability. The similarity of this group with those studied confirms this impression.^{10,15}

The number of contacts recorded and examined had no statistical significance in this study and no references were found in the literature regarding these variables.^{16,17}

Thus, the authors infer that the PB form is associated with younger age, female gender, white race,

semi-literate, residents of municipalities other than Barbacena, in urban areas, of current occupation in maintenance service, zero to five lesions, with the indeterminate and tuberculoid clinical forms, grade 0 in physical disability, bacilloscopy not performed, initial therapeutic scheme of PQT/6 doses, six to 10 recorded contacts, one to two affected nerve trunks, up to 10 doses of medications, up to five examined contacts, and healing in all patients. When evaluated again for municipality, notification, degree of disability, and therapeutic schema the same results were observed. The MB form was associated with older patients, males, white race, literate-incomplete elementary school, municipalities other than Barbacena, in maintenance services, six to 10 lesions, with the dimorphic and Virchowian clinical forms, grade I and II in disability, initial therapeutic scheme of PQT-12 doses, zero to five recorded contacts, one to two affected nerve trunks, more than 10 doses, zero to five examined contacts, and most patients healed. No changes in results for the municipality, notification, degree of disability, and therapeutic scheme were observed in the reevaluation.¹⁸⁻²⁰

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