EPIDEMIOLOGICAL PROFILE OF TUBERCULOSIS CASES IN BELÉM - PA FROM 2016 TO 2019

REVIEW ARTICLE

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ABSTRACT

Introduction: Tuberculosis is a chronic and progressive infection, often with a latency period following the initial infection. Clinical manifestations include productive cough, hyperthermia, weight loss and malaise. Method: This is a quantitative research, data were collected from the database of the Notifiable Diseases Information System (SINAN)[14] database, the analyzed variables: schooling; breed; sex; age range and type of entry. Result and Discussion: Males have the highest percentage, representing 67.1%. The age range was between 20 and 39 years old, totaling 43.5%. There is a high prevalence of notification of new cases among the types of entry, totaling 83.1%. The predominance of cases is found in the brown race with a percentage of 81.2% and when related to education the highest number is of those who have completed high school, with 29.4%. Conclusion: In view of this, there is a need for government intervention for more exposed groups, application of public policies aimed at this vulnerable public and the entire population of the municipality, aiming at the prevention, treatment and recovery of the disease.

Keywords: Tuberculosis, Epidemiological profile, Public Policies.

1. INTRODUCTION

Tuberculosis (TB) is a chronic, progressive infection, often with a latent period following the initial infection. The disease usually affects the lungs. Clinical manifestations include productive cough, hyperthermia, weight loss and malaise. The main methods of prophylaxis and containment of tuberculosis are early detection and patient treatment until cure. Also included in disease prevention is immunization with the Bacillus Calmette Guérin (BCG) vaccine, the treatment of Latent Mycobacterium Infection tuberculosis – ILTB and contact control (BRASIL, 2018, 2011).

Worldwide, close to 10 million people developed TB in 2017. The total number of new cases is falling by about 2% per year, although there have been rapid reductions in the European and African continent between 2013 and 2017 (OPAS, 2018). The disease disproportionately affects males, young adults and low-income countries, pointing to the association between the occurrence of TB and socioeconomic factors (BRASIL, 2020).

According to the WHO, Brazil achieved the Millennium Development Goals related to the incidence and mortality from tuberculosis, thus contributing to reducing the burden of TB in the world. Brazil is the country with the highest detection rate among high-burden countries (WHO, 2015, 2017). In 2019, 73,864 new cases of TB were diagnosed, thus corresponding to an incidence coefficient of 35.0 cases/100,000 inhabitants. By identifying the spatial distribution of the disease by Brazilian regions, it is possible to perceive a greater concentration of infection cases in the Southeast and North regions, respectively, with the city of Belém having one of the highest incidence rates in the country (BRASIL, 2020).

In Brazil, the National Tuberculosis Control Program (PNCT)[15] acts by structuring and implementing guidelines and public policies for the control and reduction of the

occurrence of the infection in the country (MANUAL, 2019). The PNCT prioritizes primary health care to develop surveillance, prevention, control and treatment actions, with the aim of reinforcing patient adherence, knowing the sources of infection, monitoring the progression of the infection to restore their health, and intervening in transmission to the community, these measures are possible through such a strategy as prioritizing primary care and thus expanding its universal access to the entire population (ANDRADE, *et al*., 2017).

In 2014, during the World Health Assembly, at the World Health Organization (WHO), the current global strategy for fighting TB was adopted, with the vision of a world free of tuberculosis by 2035. Brazil played the role of prominence for being the main proponent of the strategy and mainly for its experience with the Health Unic System (SUS)[16] and with the Brazilian Tuberculosis Research Network (Rede-TB)[17] (BRASIL, 2017). The delicate situation of TB in the capital of Belém and in the world is closely linked to the economic situation whose main agent is the accelerated urban growth, which consequently has collaborated with the growth of poverty, inequality of income distribution, which is a economically active population, which generates many economic shocks, as many are unable to work and maintain their livelihood (NETO, 2012).

2. MATERIALS AND METHODS

This is a descriptive analysis with a quantitative approach. An epidemiological data survey was carried out, with a retrospective analysis of variables from TB cases in the city of Belém, from 2016 to 2019.

Data were collected from the database of the Information System for Notifiable Diseases (SINAN), the variables analyzed were: schooling; breed; sex; age range and type of entry. In the research, the data were grouped and presented through tables prepared in the Microsoft Office Word 2016 program.

This study did not need to be submitted to the Ethics and Research Committee as it is based on secondary data extracted from a publicly accessible website, in accordance with Resolution No. 510 of April 7, 2016, pursuant to Law No. 12,527 of April 18. November 2011.

3. RESULTS

Table 1 shows the total number of TB cases in the period between 2016 and 2019, totaling 7174 cases, of which the male sex has the highest percentage, representing 67.1%. The age group with the highest percentage was between 20 and 39 years old, totaling 43.5%.

Table 1 - Epidemiological data on Tuberculosis according to age group and sex, in the city of Belém, Pará, Brazil, from 2016 to 2019

Age range (years old)	Examined Population	%	Male	%	Female	%
<1 Year	18	0,2	9	50	9	50
1-4	37	0,5	23	62,1	14	37,8
5-9	39	0,5	20	51,2	19	48,7
10-14	106	1,6	44	41,5	62	58,4
15-19	540	7,5	323	59,8	217	40,1
20-39	3.126	43,5	1.998	63,9	1.128	36,1
40-59	2.262	31,5	1.520	67,1	742	32,8
60-64	379	5,3	240	63,3	139	36,6
65-69	268	3,8	167	62,3	101	37,6
70-79	294	4,1	158	53,7	136	46,2
80 e +	105	1,5	61	58,1	44	41,9
Total	7.174	100,0	4.563	63,6	2.611	36,3

Source: Adaptation from the Ministry of Health/SVS – Information System for Notifiable Diseases SINAN/DATASUS.

Table 2 shows the confirmed cases of TB related to the variables of age group and type of entry, the values described correspond to the total sum of all who received

the diagnosis during the periods from 2016 to 2019. prevalence of notification of new cases among the types of entry, totaling 83.1%. While the highest rate of cases by age group corresponds to individuals aged 20 to 39 years, with a total of 43.6%.

Table 2 – Epidemiological data on Tuberculosis according to age group and type of entry, in the city of Belém, Pará, Brazil, from 2016 to 2019

Faixa Etária	População Examinada	%	Caso Novo	%	Recidiva	%	Reingresso Após Abandono	%	Transferência	%	Pós Óbito	%
<1 Ano	18	0,2	17	94,4	-	0	-	0	1	5,5	-	0
1-4	37	0,5	35	94,5	-	0	2	5,4	-	0	-	0
5-9	39	0,5	36	92,3	-	0	1	2,5	2	5,1	-	0
10-14	106	1,5	95	89,6	-	0	2	1,8	9	8,4	-	0
15-19	540	7,5	510	94,4	6	1,1	12	2,2	12	2,2	-	0
20-39	3.125	43,6	2592	81	163	5,2	263	8,4	99	3,1	8	0,2
40-59	2261	31,5	1805	79,8	203	8,9	169	7,4	82	3,6	2	0,1
60-64	379	5,3	308	81,2	48	12,6	14	3,6	9	2,3	-	
65-69	268	3,8	218	81,3	25	9,3	16	5,9	8	2,9	1	0,3
70-79	294	4,1	253	86	26	8,8	7	2,3	8	2,7	-	
80 e +	105	1,5	93	88,5	6	5,7	2	1,9	3	2,8	1	1
Total	7.172	100,0	5962	83,1	477	6,6	488	6,8	233	3,2	12	0,1

Source: Adaptation from the Ministry of Health/SVS – Information System for Notifiable Diseases – SINAN/DATASUS.

Table 3 presents the total number of TB cases according to race and education in the period from 2016 to 2019, totaling 5,165 cases. By analyzing the table, it is

possible to verify that the predominance of cases is found in the brown race with a percentage of 81.2% and when related to education, the highest number is of those who have completed high school, with 29.4%.

Table 3: – Epidemiological data on Tuberculosis according to race and education, in the city of Belém, Pará, Brazil, from 2016 to 2019

Raça	População Examinada	%	Analfabeto	%	1ª a 4ª série incompleta	%	5ª a 8ª série incompleto	%	Ensino F. completo	%	Ensino M. incompleto	%	Ensino M. Completo	%
Branca	493	11,1	28	5,6	57	11,5	126	25,5	46	9,3	82	16,6	154	31,2
Preta	308	7	9	2,9	54	17,5	96	31,1	28	9,1	53	17,2	68	22
Amarela	21	0,5	-	0	3	14,2	5	23,8	4	19	2	9,5	7	33,3
Parda	3609	81,2	129	3,5	446	12,3	1.035	28,6	405	11,2	519	14,3	1075	29,7
Indígena	11	0,2	-	0	1	9	4	36,3	2	18,1	1	9	3	27,2
Total	4442	100,0	166	3,7	561	12,6	1.266	28,5	485	10,9	657	14,7	1307	29,4

Source: Adaptation from the Ministry of Health/SVS – Information System for Notifiable Diseases – SINAN/DATASUS.

4. DISCUSSION

The result obtained in Table 1 portrays the male gender with the highest incidence of TB, this fact justifies that men have a lower demand for health services, especially preventive health actions. Another important relationship is due to the cultural factor, since the man sees himself as the provider member in the family environment, therefore, becoming ill can compromise income, in addition to showing fragility in his home environment, thus making him more susceptible to risk factors for the disease when compared to women (BRASIL, 2016).

In the study prepared by SANTOS *et al*. (2017), also shows the highest percentage for males, as it explains greater exposure by males as risk factors, linked to the deficit in the use of health services and the adoption of preventive practices. Data found by GONÇALVES *et al.* (2019) carried out in the city of Paragominas, State of Pará, results in males with the highest rate of TB (66.6%), thus corroborating the findings of this research.

The age group that had the highest rate was between 20 and 39 years old, in agreement with some studies in other cities. The recorded values follow the national standard, demonstrating a predominance of involvement in the age group between 20 and 49 years, one of the most active stages of life, showing that falling ill with TB can compromise the budget, thus generating greater financial difficulties in the family environment (MORAES *et al.*, 2017). In addition, young adults are prone to factors that interfere with their health, such as the use of alcohol, illicit drugs or cigarettes, which hinder the effectiveness of the treatment (SANTOS; SALES; PRADO, 2018).

The expressive amount of admissions for new cases is similar in other studies in which the results showed the prevalence of new cases, as in the study carried out in a municipality in Paraíba where the prevalence of new cases resulted in 86% of notifications (ALMEIDA *et al.*, 2015) This increase in new cases may be related to the efficiency of the treatment, since the other types of entries have a low frequency of notification, or failure in the diagnosis itself and its follow-up (FONTES *et al.*, 2019).

A new case is defined as one who underwent treatment for the first time or who proceeded with treatment within thirty days; readmissions after abandonment are cases that require another treatment for some specific reason; relapse is a new case of TB, even after treatment has been completed, a cure is achieved in a previous episode; transfer is the entry of the patient who entered his treatment from another location (RABAHI, *et al.*, 2017).

A medium to low level of years of schooling was observed among the cases notified by TB, despite this finding, a lack of data was found that correlate only to the level of schooling of this client and TB, however, it is known that emerging diseases are directly linked to social conditions, income and consequently the low perception of the disease that leads to a deficit in prevention, treatment and is often the cause of abandonment of therapy as a result of drug resistance (RODRIGUES and MELLO, 2018).

5. FINAL CONSIDERATIONS

The high existence of TB in the city of Belém has expressive data, starting from the point of continued transmission of M. tuberculosis that is associated with several risk factors, as an indication of low quality of life and contributing to the proliferation of diseases in infected individuals.

The research concluded that some factors stood out as more determinants for the prevalence of a higher incidence of TB cases, such as being male, with a productive working age, with the age group between 20 and 39 years old, with low education. In addition, regarding the type of entry into health services, this is evidenced by the considerable admissions of new cases, demonstrating a high prevalence of infection in the region. In view of this, there is a need to control the disease in the region, therefore, it is necessary, in addition to the intensification of actions of TB control programs, the participation and engagement of health professionals, ranging from the performance of early diagnosis and disease differential in order to break the transmission chain, as well as the active search for index cases to reduce abandonment, disease relapses and the evaluation and monitoring of contacts to avoid future illnesses.

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APPENDIX - FOOTNOTE

14. Sistema de Informação de Agravos de Notificação (SINAN).

15. Programa Nacional de Controle da Tuberculose (PNCT).

16. Sistema Único de Saúde (SUS).

17. Rede Brasileira de Pesquisas em Tuberculose (Rede-TB).

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