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CLINICAL-EPIDEMIOLOGICAL PROFILE OF TUBERCULOSIS CASES

PERFIL CLÍNICO-EPIDEMIOLÓGICO DE CASOS DE TUBERCULOSE

PERFIL CLÍNICO-EPIDEMIOLÓGICO DE LOS CASOS DE TUBERCULOSIS

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ABSTRACT

Objective: analyzing the clinical and epidemiological profile of TB cases registered in the city of Cajazeiras (PB) between 2003 and 2013. ***Method:*** a descriptive study of cross and retrospective type, with a quantitative approach, using secondary data from the database of the System of Information of Notification Aggravation of the Municipal Health, in the Department of Epidemiological Surveillance where there were obtained all cases reported from 2003 to 2013. The population consisted of all TB cases reported during the study period, totaling 266 cases. The research project was approved by the Research Ethics Committee, Protocol nº 854.351. ***Results:*** there was a predominance of new cases 86%, the pulmonary way, with 92,1%, followed by extrapulmonary with 7,1% with most of the type ganglion 61,9%. Among the cases analyzed, 89,3% underwent sputum smear microscopy, and 62,7% smear-positive and 26,6% negative. ***Conclusion:*** the research allowed recognizing the characteristics of tuberculosis in this population, and to evaluate, indirectly, the health service directed to the control of the disease in Cajazeiras/PB. ***Descriptors:*** Epidemiology; Impact Profile of the Disease; Tuberculosis.

RESUMO

Objetivo: analisar o perfil clínico-epidemiológico dos casos de Tuberculose registrados na cidade de Cajazeiras (PB) entre 2003 e 2013. ***Método:*** estudo descritivo, do tipo transversal, retrospectivo, com abordagem quantitativa, utilizando dados secundários a partir da base dos dados do Sistema de Informação de Agravo de Notificação da Secretaria Municipal de Saúde, no Departamento de Vigilância Epidemiológica onde foram obtidos todos os casos notificados no período de 2003 a 2013. A população foi composta por todos os casos de tuberculose notificados no período do estudo, totalizando 266 casos. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, Protocolo nº 854.351. ***Resultados:*** houve predominância de casos novos 86%, a forma pulmonar, com 92,1%, seguida da extrapulmonar, com 7,1% com a maioria do tipo ganglionar 61,9%. Entre os casos analisados, 89,3% foram submetidos à baciloscopia de escarro, sendo que 62,7% com baciloscopia positiva e 26,6% negativa. ***Conclusão:*** a investigação possibilitou conhecer características da tuberculose na população estudada, além de avaliar, indiretamente, o serviço de saúde dirigido ao controle da doença em Cajazeiras/PB. ***Descritores:*** Epidemiologia; Perfil de Impacto da Doença; Tuberculose.

RESUMEN

Objetivo: analizar el perfil clínico y epidemiológico de los casos de tuberculosis registrados en la ciudad de Cajazeiras (PB) entre 2003 y 2013. ***Método:*** un estudio descriptivo, de tipo transversal, retrospectivo, con un enfoque cuantitativo, utilizando datos secundarios de la base de datos del Sistema de Información de Agravo de Notificación de Municipales de Salud, en el Departamento de Vigilancia Epidemiológica que se obtuvieron todos los casos notificados entre 2003 y 2013. La población consistió en todos los casos de TB reportados durante el período de estudio, con un total de 266 casos. El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, Protocolo nº 854.351. ***Resultados:*** hubo un predominio de casos nuevos de 86%, la forma pulmonar, con 92,1%, seguida por extrapulmonar con 7,1% con la mayoría del tipo ganglio 61,9%. Entre los casos analizados, el 89,3% se sometió a la baciloscopia de esputo, y el 62,7% con baciloscopia positiva y el 26,6% negativa. ***Conclusión:*** la investigación permitió conocer las características de la tuberculosis en esta población, y para evaluar, de forma indirecta, del servicio de salud dirigido al control de la enfermedad en Cajazeiras/PB. ***Descriptores:*** Epidemiología; Perfil de Impacto de la Enfermedad; Tuberculosis.

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INTRODUCTION

Tuberculosis (TB) is an infectious disease potentially curable and preventable; it still constitutes a major public health problem in developing countries, reaching the ignored state of calamity. This has aroused concern in the health authorities, whose spread is mainly associated with living conditions of the population. Its proliferation occurs in large human settlements, with precarious infrastructure services, where hunger and poverty coexist.[1]

Tuberculosis is transmitted by air in nearly all cases. Infection occurs from inhalation of dry cores containing particles bacilli identified by Robert Koch in 1882, called Mycobacterium tuberculosis, these are expelled by coughing, sneezing speech or patient with active tuberculosis airway (larynx or lung). The active tuberculosis patients, ie, those whose sputum is positive, are the main source of infection. Patients with pulmonary tuberculosis with negative sputum smears, even if they have positive culture, are much less efficient as transmission sources, although this may occur. Strictly extrapulmonary forms do not transmit the disease.[2]

For TB control, considered an emergency disease over the health history, actions and programs have been developed and implemented by the World Health Organization (WHO) since 1993. It has been recommended that countries that accumulate the highest TB burden, including Brazil, adopt the DOTS strategy (Directly Observed Treatment). This strategy proposes the integration of primary health care and continuous adaptation of reform within the health. It was proposed in Brazil in 1998 at the National Tuberculosis Control Plan (NTCP), and then established new guidelines for work, with a view to incorporation of TB control activities within primary care.[3]

The WHO reports that 22 countries account for nearly 80.0% of cases of tuberculosis. Brazil is part of this group, occupying the 16th position in the absolute number of cases; in turn, India, China and South Africa are the countries with the highest TB burden. To be considered the incidence rate, Brazil occupies the 22th position among these countries. In 2013, Brazil has diagnosed 71.123 new cases of tuberculosis, making an incidence rate of 35,4/100.000 inhabitants. So TB is contemplated in the 6th Millennium Development Goal (MDG), which aims to reduce by 50% the incidence rate and mortality by 2015. The goals agreed by Brazil to achieve this MDG were: to ensure 85% cure of TB cases, 70% detection of new cases and reduce the abandonment of treatment less than 5%.[1,4]

The epidemiological situation of TB in Paraíba also exposes the disease as an alarming problem in 2013, it showed an incidence rate of 28,2/100.000 inhabitants. Among the estimated 1,9% mortality rate of TB cases, 56,0% of these were offered HIV testing, coinfection with a percentage of 7,3%. Among the cases of retreatment, 18,8% underwent sputum culture test. Evaluating the closure of the cases, the state got 64,6% cure and 13% dropout among new TB cases.[4]

There is polarization in Brazil from an epidemiological perspective and other socio-economic and anthropological understanding of the relationship between health and disease that culminated in the development of Public Health Policies focused on biological aspects of TB.[5]

Given the above, the choice of theme is justified by concern for tuberculosis control strategies in the city under study, by observing the presence of a significant number of cases of the disease being diagnosed at tertiary level, while we know that one of the goals of the Tuberculosis Control program for primary care is to identify respiratory symptoms and diagnose 70% of expected cases. Having this problem in mind, the present study aims:

To analyze the clinical and epidemiological profile of tuberculosis cases reported in the city of Cajazeiras (PB) between 2003 and 2013.

METHOD

This is a descriptive, cross-sectional, retrospective study with a quantitative approach, using secondary data. The population consisted of all diagnosed cases of TB and notified in the period 2003 to 2013, a total of 266 cases available in the Information System of Aggravation and Notification - SINAN, in the database of the Department of City's Health. The sample consisted of 100% of the population, considering the character of the census survey.

Data collection took place during the month of November 2014 at the Department of Epidemiological Surveillance, the Municipal Health Bureau of the city of Cajazeiras-PB, west of the State of Paraíba, middle region of Paraiba backlands and micro Cajazeiras region, distant 468 km from the capital[6], with an estimated population in 2013 of 60.612 inhabitants and territory of 565.899km^2.[7]

The data collection instrument was the proper notification form (SINAN - TB) cases of the disease, whose study variables were the Record fields: gender, age, race/color, education, district, zone, type of input, clinic, extrapulmonary forms, chest X-ray, comorbidities, sputum smear, sputum culture, histopathology, HIV; given the use of databases consent (TCUD).

Data were organized in spreadsheets in Microsoft Excel (2010), presenting them in figure tables, analyzed with the aid of descriptive statistics, discussed in light of literature. It was calculated from the epidemiological indicator, incidence rate of tuberculosis annually.

The research project was submitted to the CEP (Research Ethics Committee) of the College Santa Maria for consideration and opinion, being approved by paragraph 854.351, respecting the ethical aspects contained in Resolution nº 466, of December 12th, 2012, of the National Council of Health, which regulates research on humans, assuring the study participants anonymity and privacy.

RESULTS

During the first period from January 1st, 2003 to December 30th, 2013, there were reported 294 cases after the analysis and application of inclusion and exclusion criteria mentioned in the methodology of the study, the results obtained were from the SINAN form – Tuberculosis, from which were extracted the epidemiological data of the disease being identified 266 cases of TB in the city of Cajazeiras-PB, representing 100% of the reported cases of illness in this municipality. The data will be distributed in three parts: characterization of sociodemographic data, presentation of residence data, characterization of cases and epidemiological indicators (annual incidence rate).

Table 1. Characterization of socio-demographic data of patients with TB, notified from 2003 to 2013, Brazil, Cajazeiras-PB, 2014.

Variables	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	N	%
Gender													
Female	10	13	08	17	14	10	10	06	04	06	06	104	39,10
Male	17	15	13	18	17	13	12	14	16	16	11	162	60,90
Age (in years)													
0-25	04	06	02	05	01	05	02	04	03	00	04	36	13,53
26-59	18	13	13	25	25	18	18	13	14	19	10	186	69,93
60+	05	09	06	05	05	00	02	03	03	03	03	44	16,54
Race/Color													
White	00	08	06	09	05	06	11	07	07	07	04	70	26,32
Black	00	06	11	13	03	03	03	02	01	01	03	46	17,29
Dark	04	06	02	09	20	11	07	10	11	14	10	104	39,10
Ignored	23	08	02	04	03	03	01	01	01	00	00	46	17,29
Schooling													
Illiterate	06	09	11	08	04	01	02	00	01	00	00	42	15,79
Elementary incomplete	13	10	05	23	17	11	06	08	06	06	05	110	41,35
Elementary complete	00	00	00	00	00	01	02	01	00	01	00	05	1,88
High school incomplete	02	01	01	01	00	00	02	02	00	01	02	12	4,51
High school complete	00	00	00	00	00	00	01	02	02	02	01	08	3,01
Higher education complete	02	02	03	00	00	00	00	01	00	00	00	08	3,01
Ignored	04	06	01	03	10	10	09	06	11	12	09	81	30,45

Source: SINAN/ Municipal Health of Cajazeiras/2014.

Table 1 shows that of the 266 cases reported during the study period, 60,9% are male, while 39,1% are female. We saw the participation of men was significantly higher than that of women.

It is observed that most of the cases are in the age group 0-25 years old and 26-55 years old, young-adult, 0-25 years old obtained a concentration of 13,5%, are aged 26 to 59 years old 69,9% and over 60 years old, 16,5%.

When analyzing the variable race/color, dark-skin type prevailed with 39,1% of cases, followed by 26,3% with white, black with 17,2% and 17,2% ignored. In the case of data "ignored" it is important to remember that the notification form cannot be filled properly or being health professionals are not giving importance to this variable.

Regarding schooling variable, the incomplete elementary category was that

prevailed with 41,3%, followed by ignored with 30,4%, 15,7% illiterate, incomplete high school 4,5%, high school and higher education complete each represents 3% and finally complete fundamental 1,8%. Again, filling the SINAN plug may not be being done right, because the quality of a given tuberculosis notification is verified, above all, by the evaluation of completeness and awareness of research records.

Table 2. Presentation of data of residence of patients with TB, notified from 2003-2013, Brazil, Cajazeiras-PB, 2014

Variables	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	N	%
Neighborhood													
Alto da Bela Vista	00	00	00	01	00	00	00	01	00	02	02	06	2,25
Capoeiras	00	00	00	01	02	01	02	03	03	02	00	14	5,26
Casas Populares	00	00	00	00	00	01	00	00	01	01	00	03	1,13
Centro	09	03	04	03	05	01	03	04	06	05	05	48	18,04
Cristo Rei	00	02	00	04	02	03	01	00	00	00	00	12	4,51
Distrito de Divinópolis	00	02	01	01	01	00	00	01	00	01	00	07	2,63
Engenheiro Ávidos	01	01	01	01	00	00	00	02	00	02	00	08	3,01
Esperança	02	01	00	03	02	01	01	01	01	03	02	17	6,39
IPEPE	00	00	00	00	00	00	00	00	00	00	01	01	0,37
Jardim Oasis	00	00	00	00	00	01	00	01	01	02	00	05	1,88
Jardim Primavera	00	00	00	00	00	00	00	01	00	00	00	01	0,37
Multirão	01	03	00	02	04	02	00	01	00	00	01	14	5,26
PIO X	00	00	00	00	00	00	00	00	00	00	01	01	0,37
Por do sol	00	01	00	04	03	02	00	01	01	00	02	14	5,26
Remédio	03	01	01	01	02	01	02	00	00	00	01	12	4,51
São Francisco	04	06	05	07	05	01	05	01	03	00	02	39	14,66
São José	01	02	00	02	00	00	00	00	01	02	00	08	3,01
Sítio Alagoinha	01	00	01	01	00	01	00	00	00	00	00	04	1,50
Sítio Cocos	01	00	00	01	00	00	00	00	00	00	00	02	0,75
Sítio Patamuté	01	01	02	01	00	00	00	01	00	00	00	06	2,25
Sítio Poços	00	00	00	00	00	00	00	00	01	01	00	02	0,75
Sítio Serra da Arara	00	02	03	01	00	00	01	01	00	00	00	08	3,01
Sítio Serragem	00	01	00	00	02	00	01	00	01	01	00	06	2,25
Sol Nascente	00	01	00	00	00	01	02	00	00	00	00	04	1,50
Tercedores	00	00	00	00	00	01	00	00	00	00	00	01	0,37
Vila Nova	00	00	02	01	03	06	04	01	01	00	01	19	7,14
Ignorado	03	01	00	00	00	00	00	00	00	00	00	05	1,88
Zona													
Urbano	20	20	13	29	28	22	20	15	18	17	17	219	82,33
Rural	04	07	08	06	03	01	02	05	02	05	00	43	16,17
Ignored	03	01	00	00	00	00	00	00	00	00	00	04	1,50

Source: SINAN/ Municipal Health of Cajazeiras/2014.

It was found in this study that TB has an urban endemic profile with 82,3% of cases, the neighborhoods that will record cases of the disease were: Alto da bela vista 2,2%, Capoeiras 5,2%, Casas Populares 1,1%, Centro 18%, Cristo Rei 4,5%, Esperança 6,3%, IPEPE 0,37%, Jardim Oásis 1,8%, Jardim Primavera 0,37%, Multirão 5,2%, PIO X 0,37%, Por do sol 3,2%, Remédio 4,5%, São Francisco 14,6%, São José 3%, Sol Nascente 1,5%, Tercedores 0,37%, Vila Nova 7,1%, Ignored 1,8%. In the rural zone obtained only 16,1%, being Distrito de Divinópolis 2,6%, Engenheiro Ávidos 3%, Sítio Alagoinha 1,5%, Sítio Cocos 0,75%, Sítio Patamuté 2,2%, Sítio Poços 0,75%, Sítio Serra da arara 3%, Sítio Serragem 2,2%.

Before the samples above, we saw that the urban areas favor the transmission of the disease. And tuberculosis affects more intensely those people in disadvantaged social conditions, lacking basic sanitation, with lower education, malnutrition, living in crowded houses, in poor condition and those with immune deficiency facing the parasite.

Table 3. Epidemiological characterization of cases of TB patients notified 2003-2013, Brazil, Cajazeiras-PB, 2014

Variables	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	f	%
Type of entrance													
New case	26	24	17	31	24	22	15	19	17	18	16	229	86,09
Relapse	01	02	02	03	03	00	03	00	01	01	00	16	6,01
Re-entry after abandonment	00	00	01	00	01	01	02	01	00	00	00	06	2,25
Transference	00	02	01	01	03	00	02	00	02	03	01	15	5,65
X-ray of thorax													
Suspect	16	21	21	24	26	16	14	12	12	18	10	190	71,42
Normal	00	00	00	02	01	02	04	04	00	01	01	15	5,65
Non performed	11	07	00	09	04	05	04	04	08	03	06	61	22,93
Clinical form													
Pulmonary	27	27	21	30	26	22	20	19	19	18	16	245	92,11
Extrapulmonary	00	01	00	04	04	01	02	01	01	04	01	19	7,14
Pulmonary + Extrapulmonary	00	00	00	01	01	00	00	00	00	00	00	02	0,75
Extrapulmonary													
Pleural	00	00	00	00	02	01	00	00	00	02	00	05	23,81
Ganglia Periferical	00	01	00	05	02	00	01	01	01	01	01	13	61,90
Other	00	00	00	00	01	00	01	00	00	01	00	03	14,29
Associated aggravations													
AIDS	00	00	00	01	00	00	01	00	00	00	00	02	0,75
Alcoholism	00	05	02	04	01	05	00	02	05	11	03	38	14,28
Diabetes mellitus	00	00	02	01	00	02	02	03	01	01	01	13	4,89
Mental illness	00	01	00	01	00	03	00	02	00	01	00	08	3,01
Smoking	00	00	00	00	05	02	01	00	01	01	02	12	4,51
No	27	22	17	29	24	11	18	13	13	08	11	193	72,56
Smear of sputum													
Positive	25	21	13	15	10	10	14	15	15	17	12	167	62,78
Negative	02	06	07	14	16	07	08	04	03	02	02	71	26,69
Non realized	00	01	01	06	05	06	00	01	02	03	03	28	10,53
Sputum culture													
Positive	00	00	00	01	00	03	01	01	01	00	00	07	2,63
Negative	00	00	00	00	01	00	00	01	02	00	01	05	1,88
In progress	01	00	02	01	01	03	02	00	01	00	01	12	4,51
Non-performed	26	28	19	33	29	17	19	18	16	22	15	242	90,98
Histopathology													
Baar positive	00	00	00	03	01	01	00	02	00	01	00	08	3,01
Suggestive of TB	00	01	01	01	04	01	02	01	00	01	00	12	4,51
In progress	01	01	01	00	01	00	01	01	04	01	00	11	4,14
Non-performed	26	26	19	31	25	21	19	16	16	19	17	235	88,34
HIV													
Positive	00	00	00	00	01	01	02	02	01	00	00	07	2,63
Negative	01	00	00	04	12	04	04	13	17	19	10	84	31,58
In progress	00	00	00	31	10	12	06	02	00	03	02	66	24,81
Non-performed	26	28	21	00	08	06	10	03	02	00	05	109	40,98

Source: SINAN/ Municipal Health of Cajazeiras/2014

Regarding the type of entry, 229 were new cases (86%), 16 were cases of relapse (6%), 06 were cases of return after nonappearance (2,2%), 15 were cases of transfer (5,6%). Of the 266 cases in relation to clinical form were 245 cases are pulmonary (92,1%), 19 were extrapulmonary (7,1%) and 02 cases of pulmonary + extrapulmonary form (0,7%). In extrapulmonary forms those there were emphasized was the peripheral ganglionic form, 13 cases with a percentage of 61,9%, in the form Pleural were 05 cases (23,8%) and 03 cases of different types with a percentage of 14,2%.

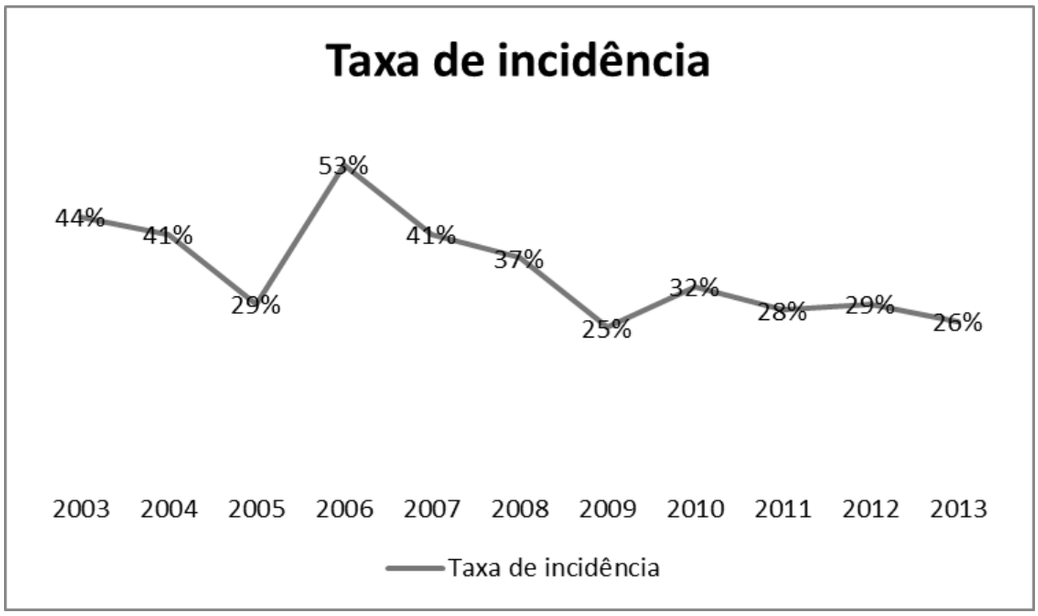
Another statistic is the X-ray of chest where showed some cases, 190 of them were Suspect cases (71,4%), Normal were 15 cases (5,6%) and were not conducted 61 cases (22,9%). The case of the harms associated with, in the studied period, found that 72,5% had no further, but (14,2%) was associated with alcohol (4,8%) had diabetes mellitus (4,5%) made use of tobacco (3%) had mental illness and 0,7% had AIDS.

Regarding sputum smear microscopy we have as positive 167 cases (62,7%), 71 negative cases (26,6%) and 28 smear done

with percentage (10,5%). According to data cited in the above table sputum culture was conducted in only (9%) cases.

In most cases it was performed during the study period, histopathology, TB diagnostic test, had income as unrealized (88,3%), suggestive of TB (4,5%), in progress (4,1%) and followed by positive AFB (3%). Serology for HIV was positive (2,6%) cases, to negative (31,5%), proved in progress (24,8%) and had not held a high rate 40,9%, this is one of the important tests to determine if the patient has the disease or not, should be carried out with precision, with benefits of early diagnosis and specific treatment for HIV, which can treat both conditions.

There was no correct completion, the analyzed records because we had the variants "in progress" and "not done" with high rates. This data shows once again, a certain disconnection of the health team and/or the person responsible for completing the reporting forms. It is also important that before typing the person in charge observe the correct completion of the form, so that the fields are filled in correctly, so be identified and that the plug return to the Basic Health Unit for adjustments, for when this routine is not implemented occurs and commitment to analysis unfeasibility of some indicators needed to assess the magnitude of the disease.



Source: SINAN/ Municipal Health of Cajazeiras/2014.

Figure 1. Tuberculosis incidence rate (per 100 thousand) in the period from 2003 to 2013. Brazil, Cajazeiras-PB, 2014.

By analyzing Figure 1, it is observed that the council of the study had a higher incidence rate that fluctuated from 25,6% to 53% of cases per 100 thousand inhabitants, maintaining an average between the years studied of 20,8 cases. According to the chart data in most years the city was in a state of intermediate endemicity and 2006 with high rate; however, these rates are high and are generally associated with low levels of socioeconomic development and the unsatisfactory conditions assistance for the early detection, standardized treatment and monitoring of cases.

DISCUSSION

These results are consistent with those found in the study in Singapore between 2007 and 2010, the number of cases in males was 67,7% and women accounted for 32,3%, a relationship identified in the city of Teresina – PI, 64,2% of cases in males and 35,8% females, this shows a ratio of masculinity. This fact can be explained by differences in exposure to risk factors by men and the living habits of this population associated with the limited demand for health services, thus promoting the highest incidence in this gender.[8-11]

The National Policy for Integral Attention to Men's Health (PNAISH) implemented in 2009 aims to promote improvements in the health status of men aged 20-59 years old, contributing to the reduction of morbidity and male mortality, developing actions that facilitate access to services, providing equal and comprehensive manner, striving for humanization of care and emphasizing to the paradigm shift in what concerns the perception of men in relation to the care of their health and the family, and considering it essential that, in addition to the educational aspects, inter alia, public services are organized to welcome and cause men to feel integrated.[12]

The main positive TB occurred in the age group with increased productivity of the

individual (21-50 years old). This reflects a problem in the socio-economic sphere of the country, since the disease away from the worker of his occupational activities, increasing absenteeism and reducing business productivity, lowering household incomes when not committing fully, and temporarily disabling the worker. Compulsory withdrawal of illness resulting from work may lead to aggravation of the suffering of people with TB, since it feels that the disease carries a social withdrawal and an occupational limitation.[13-14]

Regarding the race/color, tuberculosis reaches, almost evenly, dark skin colored, blacks and whites. It was evident, therefore, that this feature should not be regarded as a risk factor for disease development. What makes an individual belonging to a certain racial group varies according to season and region of the world in which he lives, and the political and cultural interests classifies them in a particular group. It can still perform association between the existence of social inequalities and color, where populations of brown and black races have a lower level of education and consequently a lower income.[15-16]

It is important to note in a study conducted in Bagé, that the prevalence of TB in this municipality, as well as in Chapecó, was also higher among patients with low education (less than seven years), and this lack of knowledge is a considerable risk factor for the occurrence of this disease. Collaborating with the reality that was identified in the same city in Minas Gerais, most had, at best, incomplete or complete high school, and 12,5% were illiterate. It is believed also that this fact is related to working conditions, housing and care of these individuals with a lower level of knowledge, factors closely related to the expansion of the same.[17-19]

Formal education is a determining factor for access to health education, to the entry of possibilities in the labor market and facilitating the acquisition of income, factors that are reflected in living conditions, housing and own health. In the case of infectious diseases, the proper knowledge of this pathology, as well as control measures and its treatment are central to the evolution of the patient, so that the educational background of the individual is very relevant for understanding the health care, as well as for the adoption of a more appropriate lifestyle that favors such assistance.[20]

In the survey it has demonstrated at the ecological level a significant association between low socioeconomic status and the occurrence of TB. This situation is repeated in other cities of Brazil, for example, a study in Ribeirão Preto-SP, predominantly urban municipality as well as Cajazeiras, showed that the comparison of living conditions of maps and TB evidenced relationship between the disease and more areas needy of the city. Studies on the prevalence of chronic diseases reveal gradients that tend to have the highest values in the economically disadvantaged segments.[21-23]

Despite the territorial extension of the municipality, they exhibit remarkable demographic and socioeconomic differences. The explanation of the disease as a mass phenomenon calls for the investigation of their population aspects. The structure and organization of geographical space is the historical result of the interaction between the environment and population in which this space occur collective diseases whose onset is associated with a favorable socioeconomic structure and brokered by a situation of ecological and social factors, related to environmental and population components, respectively.[24]

Regarding the clinical forms of tuberculosis anticipate a distribution in the general population, about 80.0% of pulmonary TB and 20,0% of extrapulmonary. The prevalence of admissions for 'new case' was also observed by other authors, who found 82,6% of 'new cases' for the diagnosis of the disease also showed a higher number of diagnosed cases of pulmonary tuberculosis. Such as pulmonary TB is infectious form of the disease is expected in advance highest percentage of cases reported by this pulmonary form. According to the World Health Organization, about 90% of existing cases are pulmonary tuberculosis, whereas the extrapulmonary forms account for about 10%.[25-27]

It is among the reported cases that underwent chest X-rays, that 94 (84,7%) had a diagnosis result as suspect; in many of them it was observed not to perform this test. In another study says that the most common associated diseases was alcoholism (16,5%), followed by other associated diseases (9,2%), AIDS (7,1%), diabetes (4,3%) and mental illness (2,2%). Validating that alcoholism is the main complaint associated with tuberculosis who frequently involves the situation of social fragility of immunosuppressed individuals, relating to malnutrition and exposure of patients to risk situations, leading the patient non-adherence to treatment.[28-29]

According to a study conducted it shows that the result of the laboratory examination of sputum smear microscopy was positive in

331 cases (50,1%) and negative in 135 (20,4%), indicating that about half of the individuals with the disease are patients with active tuberculosis. It reaffirms in another study according to the study that made the sputum culture was performed in only (7%) cases studies emphasize that despite the smear represent the primary diagnostic tool for tuberculosis because of its low cost and simplicity, its limitations still demand the realization of culture[30-31].

In the study carried the diagnosis of mainly extrapulmonary tuberculosis is based on radiographic examination and histopathology, another difficulty relates to the material, since the absence of granulomas in tissues does not exclude the possibility of the disease, the diagnosis can be defined by microscopy, and/or culture of material from aspiration or by histopathology material obtained by biopsy. Work carried out reaffirms that the serology for HIV was positive in 7,7% of cases and the frequency with which this examination was not carried out was high (59,3%).[29,32]

There were reported SINAN in 2012, the Paraíba made the notification of 1.114 new cases, 80 cases of recurrences and 47 deaths from tuberculosis, with an incidence of 29,1/100.000 inhabitants and in the same year the Cajazeiras municipality obtained rate of 26,0/100.000 inhabitants. According to the following classification of cases incidence rates per 100.000 inhabitants: low (> 10 <20), intermediate (>20 <50), high (> 50).[33]

In Brazil, TB is a priority in national health programs and it is estimated that 129.000 new cases occur annually, of which about 40.000 are not notified. Although patients are diagnosed by health services easily, notification of TB cases in the information system sometimes does not occur, or are carried out incompletely. So even when the diagnosis of TB cases are performed, the inefficiencies of the notification in the information system makes it difficult to understand the real incidence of the disease.[34]

CONCLUSION

Tuberculosis even being a public health problem in Brazil is an easily diagnosed disease, which has treatment available to the entire population and healing in all cases that are diagnosed. However, identifying the most precarious areas tends to an increased risk for this condition, so just step up actions so that there is real reduction in new cases of numbers.

Disadvantaged populations are most vulnerable to acquiring this disease due to social inequalities. This study allows us to identify which were the most affected sites with the disease and the profile of individuals, having seen that makes it possible for municipal public health planning preventive, curative and health promotion to minimize the effects still caused by prejudice to patients and family so one can reduce the high rate of incidence of TB in these most affected urban neighborhoods, and cannot forget to provide education and health lectures to other locations in the municipality for influencing both the appearance of the pathology as well as the adherence of treatment of TB.

It is necessary for the municipality to develop and intensify training programs for the professional teams of BHU causing stimulate the active search for new cases. It is also important to really make use of the TDO's strategy so the patient will be accompanied not only the same as keeping track of household contacts, in order to prevent relapse and return after default so that increases further the epidemiological situation of the city. In addition, there were major limitations in the data collection process, restricted the reporting forms, which showed considerable number of faulty information, which undertake some inferences.

This study may contribute to the development of effective action on the part of managers for development of local public policies and strategies to reduce the incidence of the disease, improving the quality of life of individuals with tuberculosis, the municipality must step up incentives social, trying to contemplate the population inserted in the social and epidemiological context, so there is change in the living conditions of these people. For this you must program and plan hedging strategies so that they can step up and train professionals to identify and pursue new cases, so prevalent early diagnosis and increasing the rate of 70% of new cases, for the control and possibly the elimination of municipal disease in the coming years.

REFERENCES

1. Santos TMMG, Nogueira LT, Santos LNM, Costa CM. Caracterização dos casos de tuberculose notificados em um município prioritário do Brasil. Rev Enferm UFPI. [Internet]. 2012 Jan-Apr [cited 2014 Jan 22];1(1):8-13. Available from: http://www.ojs.ufpi.br/index.php/reufpi/article/view/703/617.

2. Brasil. Ministério da Saúde. Manual de recomendações para o controle da tuberculose no Brasil – Brasília: Ministério da Saúde, 2011.

3. Nogueira JA, Sá LD, França UM, Almeida AS, Lima DS, Figueiredo TMRM, et al. O sistema de informação e o controle da tuberculose nos municípios prioritários da Paraíba-Brasil. Rev Esc Enferm USP. [Internet]. 2009 Mar [cited 2014 Jan 22];43(1):125-31. Available from: http://dx.doi.org/10.1590/S0080-62342009000100016.

4. Brasil. Ministério da Saúde. Boletim Epidemiológico da tuberculose. Brasília, Ministério da Saúde: 2014.

5. Barbosa DRM, Almeida MG, Martins LM, Varão Silva TMG, Pedrosa JIS; Barbosa MM. Aspectos socioculturais da tuberculose e diálogo com políticas públicas em saúde no Brasil. Covibra Saúde. 2013 [cited 2014 Jan 22];(Spec):2135-45. Available from: http://www.convibra.com.br/upload/paper/2012/69/2012_69_4325.pdf.

6. Brasil. Ministério de Minas e Energias. Projeto cadastro de fontes de abastecimento por água subterrânea. Diagnóstico do município de Cajazeiras, Estado da Paraíba. Brasília: Ministério de Minas e Energias, 2005.

7. Instituto Brasileiro de Geografia e Estatistica. [Internet] [cited 2014 Dec 11]. Available from: http://censo2010.ibge.gov.br.

8. Coutinho LASA, Oliveira DS, Souza GF, Filho GMCF, Saraiva MG. Perfil Epidemiológico da Tuberculose no Município de João Pessoa-PB, entre 2007-2010. Rev bras ciênc saúde. 2012;16(1):35-42.

9. Coelho DMM, Viana RL, Madeira CA, Ferreira LOC, Campelo V. Perfil epidemiológico da tuberculose no Município de Teresina-PI, no período de 1999 a 2005. Epidemiol serv saúde. [Internet]. 2010 Jan-Mar [cited 2014 Jan 22];19(1):33-42. Available from: http://scielo.iec.pa.gov.br/pdf/ess/v19n1/v19n1a05.pdf.

10. Vendramini SHF, Gazetta CE, Chiaravalotti NF, Cury MR, Meirelles EB, Kuyumjian FG, et al.Tuberculose em município de porte médio do Sudeste do Brasil: indicadores de morbidade e mortalidade, de 1985 a 2003. J bras pneumol. [Internet]. 2005 May-June [cited 2014 Jan 22];31(3):237-43. Available from: http://dx.doi.org/10.1590/S1806-37132005000300010.

1. Araújo KMFA, Figueiredo TMRM, Gomes LCF, Pinto ML, Silva TC, Bertolozzi MR. Evolução da distribuição espacial dos casos novos de tuberculose no município de Patos (PB), 2001-2010. Cad saúde col [Internet]. 2013 July-Sep [cited 2014 Jan 22];21(3):296-302. Available from: http://dx.doi.org/10.1590/S1414-462X2013000300010.

11. Andrade RF, Monteiro AB. Fatores determinantes para criação da Política Nacional de Saúde do Homem. Rev eletrônica de humanidades do curso de ciências sociais da UNIFAP [Internet]. 2013 Dec [cited 2014 Jan 22];5(5):71-86. Available from: http://periodicos.unifap.br/index.php/pracs/article/view/552/n5Monteiro.pdf.

12. Takao EKH, Caleffi KR, Castilho AL, Siqueira VLD, Cardoso RF, Mathias TAF. Perfil epidemiológico da tuberculose na 15ª regional de saúde de Maringá-PR, no período de 2005 a 2010. Rev saúde biologia [Internet]. 2013 Jan-Apr [cited 2014 Jan 22];8(1):14-20. Available from: http://revista.grupointegrado.br/revista/index.php/sabios2/article/view/1315/478.

13. Cavalcante EFO, Silva DMGV. Perfil de pessoas acometidas por tuberculose. Rev Rene [Internet]. 2013 [cited 2014 Jan 22];14(4):720-9. Available from: http://www.revistarene.ufc.br/revista/index.php/revista/article/view/1152/pdf.

14. Moraes NL, Moraes TP, Lafaiete RS, Motta MCS, Villa TCS. Características sócio-econômicas dos usuários do programa de controle da tuberculose do município do rio de janeiro. Rev pesqui cuid fundam (Online) [Internet]. 2010 Oct-Dec [cited 2014 Jan 22];2(Supl):209-12. Available from: http://dx.doi.org/10.9789/2175-5361.2010.v0i0.%25p.

15. Alves C, Fortuna CMM, Toralles MBP. A Aplicação e o Conceito de Raça em Saúde Pública: Definições, Controvérsias e Sugestões para Uniformizar sua Utilização nas Pesquisas Biomédicas e na Prática Clínica. Gaz Med Bahia. 2005;75(1):92-115.

2. Silveira MPT, Adorno RFR, Fontana T. Perfil dos pacientes com tuberculose e avaliação do programa nacional de controle da tuberculose em Bagé (RS). J bras pneumol [Internet]. 2007 Mar-Apr [cited 2014 Jan 22];33(2):199-205. Available from: http://dx.doi.org/10.1590/S1806-37132007000200015.

3. Souza MB, Antunes CMF, Garcia GF. Perfil de sensibilidade e fatores de risco associados à resistência do Mycobacterium tuberculosis, em centro de referência de doenças infecto-contagiosas de Minas Gerais. J bras pneumol [Internet]. 2006 Sep-Oct [cited 2014 Jan 22];32(5):430-7. Available from:

http://dx.doi.org/10.1590/S1806-37132006000500010.

16. Paixão LMM, Gontijo ED. Perfil de casos de tuberculose notificados e fatores associados ao abandono, Belo Horizonte, MG. Rev saúde pública [Internet]. 2007 [cited 2014 Jan 22];41(2):205-13. Available from: http://www.scielo.br/pdf/rsp/v41n2/07-5366.pdf.

17. Nogueira JA, Marques RRC, Silva TR, França UM, Villa TCS, Palha PF. Caracterização clínico epidemiológica dos pacientes com diagnóstico de tuberculose resistente às drogas em João Pessoa, PB. Rev eletr enf [Internet]. 2008 [cited 2014 Jan 22];10(4):979-89. Available from: https://www.fen.ufg.br/fen_revista/v10/n4/pdf/v10n4a10.pdf.

18. Souza WV, Albuquerque MFM, Barcellos CC, Ximenes RAA, Carvalho MS. Tuberculose no Brasil: construção de um sistema de vigilância de base territorial. Rev saúde pública [Internet]. 2005 [cited 2014 Jan 22];39(1):82-9. Available from: http://www.scielo.br/pdf/rsp/v39n1/11.pdf.

19. Hino P, Villa TCS, Cunha TN, Santos CB. Padrões espaciais da Tuberculose e sua associação à condição de vida no município de Ribeirão Preto. Ciênc saúde coletiva [Internet]. 2011 Dec [cited 2014 Jan 22];16(12):4795-802. Available from: http://dx.doi.org/10.1590/S1413-81232011001300028.

20. Barros MBA, Francisco PMSB, Zanchetta LM, Cesar CLG. Tendências das desigualdades sociais e demográficas na prevalência de doenças crônicas no Brasil, PNAD: 2003- 2008. Ciênc saúde coletiva [Internet]. 2011 Sept [cited 2014 Jan 22];16(9):3755-68. Available from: http://dx.doi.org/10.1590/S1413-81232011001000012.

21. Mendonça MFS, Alencar FL, Barros MDA. Perfil da tuberculose e sua área de risco no município de Olinda–PE: uma abordagem espacial. Rev ciências médicas pernambuco. 2013;9(1):55-70.

22. Medeiros CJ, Pretti CBO, Nicole AG. Características demográficas e clínicas dos casos de tuberculose notificados pelo Núcleo de Epidemiologia Hospitalar no Município de Vitória, Estado do Espírito Santo, Brasil, 2009-2010. Epidemiol serv saúde [Internet]. 2012 Mar [cited 2014 Jan 22];21(1):159-66. Available from: http://dx.doi.org/10.5123/S1679-49742012000100016.

23. Oliveira HB de, Marin-León L, Gardinali J. Análise do programa de controle da tuberculose em relação ao tratamento, em Campinas-SP. J bras pneumol [Internet]. 2005 Apr [cited 2014 Jan 22];31(2):133-8. Availablr from: http://dx.doi.org/10.1590/S1806-37132005000200008.

24. Bierrenbach AL, Gomes ABF, Noronha EF, Souza MFM. Incidência de tuberculose e taxa de cura, Brasil, 2000 a 2004. Rev saúde pública [Internet]. 2007 Sept [cited 2014 Jan 22];41(1):24-33. Available from: http://dx.doi.org/10.1590/S0034-89102007000800005.

25. Vieira NA, Vieira CPB, Pinto FJM, Fialho AVM. Estudo da tuberculose no município de Mossoró (RN) em 2008. Rev baiana saúde pública [Internet]. 2011 Oct-Dec [cited 2014 Jan 22];34(4):879-92. Available from: http://inseer.ibict.br/rbsp/index.php/rbsp/article/viewFile/80/86.

26. Angelotti LCZ, Alexandre PBD, Miranzi SSC, Scatena LM. Qualidade de dados de notificação e acompanhamento dos casos de tuberculose em Minas Gerais. Rev enferm atenção saúde [Internet]. 2013 [cited 2014 Jan 22];2(2):84-9. Available from: http://www.uftm.edu.br/revistaeletronica/index.php/enfer/article/view/387/410.

27. Jesus BFG, Souza, PGO, Silveira MF, Santo LRE. Perfil epidemiológico da tuberculose na cidade de Montes Claros de 2005 a 2009. Rev Bras Farm [Internet]. 2012 [cited 2014 Jan 22];93(1):80-4. Available from: http://www.rbfarma.org.br/files/rbf-2012-93-1-13.pdf.

28. Neto MS, Silva FL, Sousa KR, Yamamura M, Popolin MP, Arcêncio RA. Perfil clínico e epidemiológico e prevalência da coinfecção tuberculose/HIV em uma regional de saúde no Maranhão. J bras pneumol [Internet]. 2012 Nov-Dec [cited 2014 Jan 22];38(6):724-32. Available from: http://dx.doi.org/10.1590/S1806-37132012000600007.

29. Silva ATP, Monteiro SG, Figueiredo PMS. Perfil epidemiológico dos pacientes portadores de tuberculose extrapulmonar atendidos em hospital da rede pública no estado do Maranhão. Rev Bras Clin Med [Internet]. 2011 Jan-Feb [cited 2014 Jan 22];9(1):11-4. Available from: http://files.bvs.br/upload/S/1679-1010/2011/v9n1/a1715.pdf.

30. Antunes A. Programa Nacional de Luta contra a Tuberculose. Sistema de Vigilância. Ponto de situação epidemiológica e de desempenho. 2012 [cited 2014 Jan 22];1-17. Available from: http://portal.arsnorte.min-saude.pt/portal/page/portal/ARSNorte/Conte%C3%BAdos/Sa%C3%BAde%20P%C3%BAblica%20Conteudos/PNT%20-

%20Ponto%20da%20Situa%C3%A7%C3%A3o%20Epidemiol%C3%B3gica%20e%20de%20Desempenh.pdf

31. Azedo RCM, Bezerra SS, Fonte CFV, Sobrinho JLS. Avaliação comparativa do perfil e tratamento de pacientes nos Programas de Tuberculose do Estado de Pernambuco e do Hospital Universitário Oswaldo Cruz. Boletim Informativo Geum [Internet]. 2014 Jan-Mar [cited 2014 Jan 22];5(1):71-8. Available from: http://www.ojs.ufpi.br/index.php/geum/article/view/1737/1329.

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