

MULTIDRUG-RESISTANT TUBERCULOSIS: EPIDEMIOLOGICAL ANALYSIS AT A TEACHING HOSPITAL

Tuberculose multirresistente: análise epidemiológica em um hospital de ensino

Tuberculosis multiresistente: análisis epidemiológico en un hospital docente

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ABSTRACT

Objective: The study's goal has been to describe the epidemiological profile of patients diagnosed with Multidrug-resistant tuberculosis (MDR-TB) at a referral teaching hospital in the *Rio de Janeiro* city. **Methods:** It is a descriptive and cross-sectional study with a quantitative approach, which was carried out at a referral tertiary teaching hospital for the treatment of MDR-TB in the *Rio de Janeiro* city. A structured instrument was used with information from 40 medical records. Data analysis was performed using the SPSS software. **Results:** The average age found for 40 patients diagnosed with MDR-TB was 43.6 years old, 40% had less than 7 (seven) years of education and 70% were either self-declared brown or black. **Conclusion:** There was verified a high prevalence of patients within the age group from 21 to 40 years old, as well as a high number of patients having low education.

Descriptors: Tuberculosis resistant to multiple drugs, epidemiological profile, prevalence.

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RESUMO

Objetivo: Descrever o perfil epidemiológico dos pacientes diagnosticados com Tuberculose Multirresistente em um hospital de ensino de referência na cidade do Rio de Janeiro. **Método:** Estudo descritivo, quantitativo, desenvolvido em uma instituição terciária de ensino de referência para tratamento de TBMR na cidade do Rio de Janeiro. Foi utilizado instrumento estruturado com informações de quarenta prontuários. A análise dos dados foi realizada através do software SPSS. **Resultados:** A média de idade encontrada nos 40 pacientes diagnosticados com TBMR foi de 43.6 anos, 40% tinham menos de 7 anos de estudo e 70% se declararam pardos ou negros. **Conclusão:** Foi verificada uma alta prevalência de pacientes na faixa etária de 21-40 anos, bem como uma alta proporção de pacientes com baixa escolaridade.

Descritores: Tuberculose Resistente a Múltiplos Medicamentos, perfil epidemiológico, prevalência.

RESUMEN

Objetivo: Describir el perfil epidemiológico de los pacientes diagnosticados con Tuberculosis Multirresistente en un hospital de enseñanza de referencia en la ciudad de Río de Janeiro. **Método:** Estudio descriptivo, cuantitativo, desarrollado en una institución terciaria de enseñanza de referencia para tratamiento de TBMR en la ciudad de Río de Janeiro. Se utilizó un instrumento estructurado con información de cuarenta registros. El análisis de los datos se realizó a través del software SPSS. **Resultados:** La media de edad encontrada en los 40 pacientes diagnosticados con TBMR fue de 43.6 años, 40% tenían menos de 7 años de estudio y el 70% se declaró pardos o negros. **Conclusión:** Se verificó una alta prevalencia de pacientes en el grupo de edad de 21-40 años, así como una alta proporción de pacientes con baja escolaridad.

Descriptor: Tuberculosis Resistente a Múltiples Medicamentos, perfil epidemiológico, prevalencia.

INTRODUCTION

Multidrug-resistant tuberculosis (MDR-TB) is one of the major public health issues faced in both developed and developing countries nowadays.¹ The increasing number of these cases has been causing concern worldwide, and this clinical form of multidrug resistance has been increasingly related to the deficiency of health systems and presents itself as a major global challenge for TB control.² According to estimates from the last World Health Organization (WHO) report in 2016, 490 thousand people worldwide were affected by MDR-TB, with 2,400 cases of MDR-TB diagnosed in Brazil.³

Tuberculosis maintains its undesirable status as the leading killer of infectious diseases in the world, global progress in reducing new cases of tuberculosis and deaths is insufficient to achieve the global goals for tuberculosis and Human Immunodeficiency Virus (HIV), although most deaths can be prevented with diagnosis early and appropriate treatment.⁴

Given the high impact of *M. tuberculosis* infection on public health, therapeutic problems associated with resistant multidrug lines and high public expenditure, TB remains an endemic disease in our country.

The problem of multidrug resistance is related to the impact on patients' quality of life and treatment, has a much higher mortality, more frequent and serious side effects of medication, and is also associated with much higher costs and less adherence to treatment, which is why they are New approaches are needed to prevent the spread of multidrug-resistant forms and to treat this disease, especially in the poorest countries.^{5,6}

In Brazil, there is a shortage of recent studies addressing the epidemiology of MDR-TB, which makes difficult the process of disease territorial balancing based on its determining and conditioning factors, whether social, cultural or clinical-epidemiological. Bearing in mind the above-mentioned, this study meant to describe the epidemiological profile of patients diagnosed with MDR-TB at a referral teaching hospital in the *Rio de Janeiro* city.

METHODS

It is a descriptive and cross-sectional study with a quantitative approach. The research was performed based on information obtained from 40 patients' medical records who were forwarded with MDR-TB to the Hospital Universitário Clementino Fraga Filho (HUCFF) [University Hospital]. The HUCFF is a referral teaching hospital for MDR-TB treatment, located in the Universidade Federal do Rio de Janeiro (UFRJ) campus, which currently receives patients diagnosed with MDR-TB. At the time of collection, 40 patients had been admitted to the HUCFF for MDR-TB treatment, and all medical records were then used for data collection, since all met the inclusion criteria of the study.

The study was carried out over the period from August to December 2016, and the data were obtained by analyzing the medical records.

The population was composed of patients belonging to the Programmatic Area 2.2 who were forwarded to the HUCFF for MDR-TB treatment. The Programmatic Area 2.2 has the study hospital as a referral for the treatment of MDR-TB and covers 7 neighborhoods, as follows: *Praça da Bandeira, Tijuca, Alto da Boa Vista, Maracanã, Vila Isabel, Andaraí, Grajaú*.

The sample was delimited according to the following inclusion criteria: patients diagnosed with MDR-TB, aged 18 years old or older, and undergoing treatment with a basic scheme recommended by the National Tuberculosis Control Program. As exclusion criteria, the medical records of users who had incomplete information and difficulty in understanding were not eligible.

Data collection took place through a structured questionnaire used for the sociodemographic evaluation where the variables investigated were the following: gender, skin color, age, and education.

The data obtained were coded and typed on a Microsoft Excel 2010 electronic spreadsheet and analyzed with the support of the statistical package for social sciences (SPSS)

version 22.0. Data were processed with descriptive statistics and presented in frequency tables, with absolute values (n) and percentages (%) for categorical variables.

All ethical procedures that addresses researches involving human beings were observed and respected, according to the Resolution No. 466/2012, and in the Normative 001/2013 regulated by the National Health Council.

The study was approved by the Research Ethics Committee from the *Escola de Enfermagem Anna Nery (EEAN)* [Nursing School], *Universidade Federal do Rio de Janeiro (UFRJ)*, on May 31st, 2016, under the *Certificado de Apresentação para Apreciação Ética (CAAE)* [Certificate of Presentation for Ethical Appreciation] No. 54091116.7.0000.5238.

RESULTS

Table 1 shows that among the 40 investigated patients, 67.5% were male and 32.5% female, with the majority self-declared brown 42.5%. By analyzing the level of education, it was noticed that 40% had between 4 (four) and 7 (seven), and 42.5% had between 8 (eight) and 11 years of education.

Table 1: Patients' sociodemographic characteristics.

Variable	Notified Cases	
	n	%
Gender	Male	27 67.5
	Female	13 32.5
Skin color	White	12 30.0
	Brown	17 42.5
	Black	11 27.5
Age	0-20 years old	3 7.5
	21-40 years old	21 52.5
	41-60 years old	8 20.0
	61 years old or more	8 20.0
Education	0-3 years	4 10.0
	4-7 years	16 40.0
	8-11 years	17 42.5
	12 or more	3 7.5
Total	40	100

The average age found for 40 patients diagnosed with MDR-TB was 43.6 years old, ranging from 18 to 77 years old. When analyzing the educational level, 40% had less than 7 (seven) years of education. In developing countries, such as Brazil, the serious social inequalities, the increase in poverty and the poor distribution of income, when associated with precarious medical and sanitary conditions and, also, the difficulty in accessing health services, lead to higher rates of infection by the microorganism, the worsening of the disease, the high frequency of comorbidities, co-infection such as HIV/TB, and the development of strains resistant to multiple drugs. Given this framework, the MDR-TB is undoubtedly one of the most serious problems nowadays.

DISCUSSION

An important finding of this research addresses the predominance of tuberculosis in males. It is similar to the literature, where the difference in TB cases between the genders might be due to several factors, such as economic, cultural and social related to exposure to bacillus.^{7,8,9}

Herein, 27.5% of the patients were self-declared black and 42.5% were brown, which corroborates with other studies carried out in Brazil, where blacks and browns have less education, lower wages, live in the suburbs of large cities and are excluded from various social rights. Hence, it can start from the hypothesis that the health, disease and death process is socially constructed and demarcated by the territorial and social space that men and women, white and black, occupy in society.^{10,11}

It is known that socio-cultural factors can hinder treatment, such as low level of education, ignorance about tuberculosis and non-acceptance of the disease, in addition to the fact that some patients consider themselves cured before the effective cure, since patients feel good.¹²

In developing countries, 80.0% of those infected belong to the age group from 15 to 59 years old, considered to be the most socially productive, with economic and social implications for himself and his family.^{13,14} Herein, the most affected age group ranged from 21 to 40 years old (52.5%), the highest rate of MDR-TB in this range may be related to this population lifestyle, who normally consume alcoholic beverages and have irregular feeding schedules, factors that can contribute to treatment interruption, these results being confirmed in several studies.^{12,13,15,16}

Twenty percent of the cases were found in the age group above 61 years old, confirming that the increase in life expectancy and the decrease in immunity caused by aging in this population has altered the age group profile of tuberculosis cases, increasing its occurrence among elderly people.^{2,16,17} By analyzing the educational level, 40% had less than 7 (seven) years of education, confirming with data from the literature, where in an ecological study San Pedro (2013) argues that it is possible to verify which indicators refer income, education and population density are associated with tuberculosis at different levels of spatial aggregation. Several factors can hinder the treatment and cure of tuberculosis, such as: factors of a socio-cultural nature, low level of education, ignorance, and non-acceptance about the disease, wrong perception of considering oneself cured before an effective cure, since patients feel better after the first fifteen days of treatment. The shorter the period of schooling, the greater the need for special attention from health professionals to the patient undergoing treatment in order to promote easy-to-understand guidelines for the patient, thus avoiding abandonment.

In Brazil, there is a shortage of recent studies addressing the epidemiology of MDR-TB, which makes difficult the process of disease territorial balancing based on its determining and conditioning factors, whether social,

cultural or clinical-epidemiological.

CONCLUSIONS

Bearing in mind the aforesaid, this study showed a high prevalence of patients within the age group from 21 to 40 years old, as well as a high number of patients having low education. Such data can support the need to create a care model aimed at studying the epidemiological profile of patients with MDR-TB, aiming to promote a participatory, collective practice, with educational groups that promote preventive actions, identifying and studying strategies to overcome barriers related to the reality of life, both individual and collective. Hence, it is expected that the results of this study can contribute to the improvement of health actions, providing subsidies for teams to intensify educational and awareness actions, consequently, reducing the number of MDR-TB cases.

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