

MULTI-DRUG RESISTANT TUBERCULOSIS IN SIBIU COUNTY BETWEEN 2011 AND 2014

ADRIANA RĂDULESCU¹

¹Pneumophthisiology Hospital, Sibiu

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Abstract: Romania is one of the European countries with the highest tuberculosis endemia. This is largely due to not taking elementary control measures regarding the transmission of this infection in society.(1,2) Tuberculosis remains one of the major infectious diseases associated with high mortality, worldwide.(3) If the forms of TB, sensitive to the major anti-tuberculous drugs, recognize a decline in their number, the forms of MDR-TB increase numerically from year to year. The aim of this study is to analyze the evolution of MDR-TB cases in the county of Sibiu during 01.2011- 12.2014. Materials and methods: This is a retrospective study conducted on 115 patients with MDR-TB registered in the Dispensary of the Pneumology Hospital of Sibiu during 01.2011-12.2014. Results: In the county of Sibiu, in recent years, MDR-TB recorded a decrease in prevalence, still being more frequently encountered in males, aged 40-60 years old, in heavy drinkers and social cases.

INTRODUCTION

Multi-drug resistant tuberculosis (MDR-TB) is caused by the Koch bacillus resistant to at least two first-line anti-tuberculous drugs: hydrazide (H) and rifampicin (R). MDR-TB is much more difficult to diagnose and expensive to treat than drug-sensitive TB and the prognosis of these patients is more severe. MDR-TB requires an average of 24 months of treatment to cure, while sensitive-drug forms need on average 6-12 months to cure.(4,5,6) The main cause of MDR-TB is the use of improper treatment regimens in terms of doses, association of anti-tuberculous drugs, short duration of treatment, therapeutic dropout with subsequent treatments. Therefore, MDR-TB is more common in the countries that do not implement effective TB control programmes. A worrying fact is that for 40 years, there has not been found an effective drug to treat tuberculosis. Bedaquilina is the first new anti-TB drug accepted by the Food and Drug Administration (FDA) in the last 40 years, in 2014. Its use is recommended only for MDR-TB cases.(7,8)

PURPOSE

The purpose of this paper is to assess the epidemic of MDR-TB in Sibiu County, between 01.2011 and 12.2014.

The main objectives of the paper were:

- to assess the prevalence of MDR-TB in Sibiu County between 01.2011 and 12.2014;
- to assess the distribution of MDR-TB cases by age;
- to assess MDR-TB cases per gender;
- to study the morbid associations of MDR-TB.

MATERIALS AND METHODS

The current study is a retrospective one conducted between 01.2011 and 12.2014, on a group of 115 patients with confirmed MDR-TB, registered in the evidence of the Dispensary within the Pneumology Hospital of Sibiu during that period of time. Within this group, I studied the prevalence of the cases distributed per years, age groups, gender and associated comorbidities.

Criteria for inclusion of patients in the study were: patients of both genders, age group of 0-60 years old, patients with MDR-TB with positive sputum microscopy (M) and / or culture (C) and antibiogram (ABG) at least H and R resistance.

Exclusion criteria for this study were: contacts of patients with MDR-TB with radiological changes suggestive of pulmonary TB without bacteriological confirmation and those receiving treatment depending on the source antibiogram.

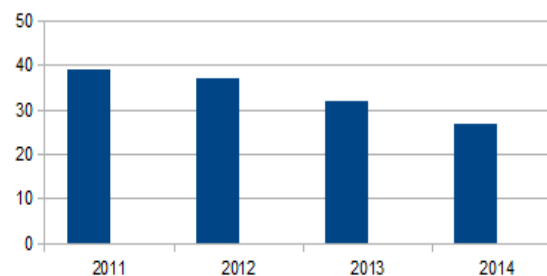
RESULTS AND DISCUSSIONS

Analyzing the group consisting of the 115 patients with MDR-TB registered in the Dispensary within the Pneumology Hospital of Sibiu, between 01.2011 and 12.2014, it has been found a decrease in MDR-TB prevalence during the studied period.

Table no. 1. MDR-TB prevalence in Sibiu County between 01.2011 and 12.2014

Year	No. of cases of MDR - TB	Percentage (%)
2011	39	28.85
2012	37	27.4
2013	32	23.7
2014	27	20

Figure no. 1. Prevalence of MDR-TB cases in Sibiu County between 01.2011 and 12.2014

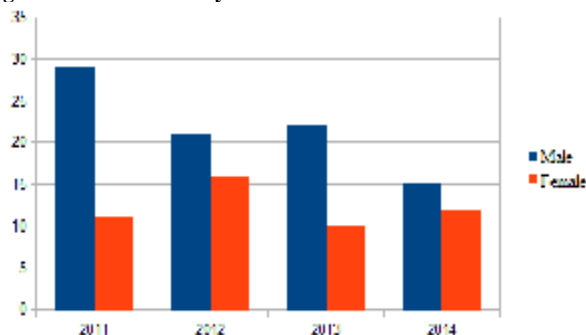


¹Corresponding author: Adriana Rădulescu, Str. Aleea Filozofilor, Nr. 3-5, Sibiu, România, E-mail: adrianaradulescu58@yahoo.com, Phone: +40733 499100

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Analyzing the distribution of MDR-TB cases by gender, it has been found that is more frequently encountered in males during the analyzed period of time. The explanation is the same as in the case of TB forms with first-line anti-tuberculosis drug susceptibility, in a more frequent association in men, of chronic alcoholism, chronic liver disease, protein-energy malnutrition and disorganized lifestyle.

Figure no. 2. MDR – TB cases distribution according to gender in Sibiu County between 01.2011 and 12.2014



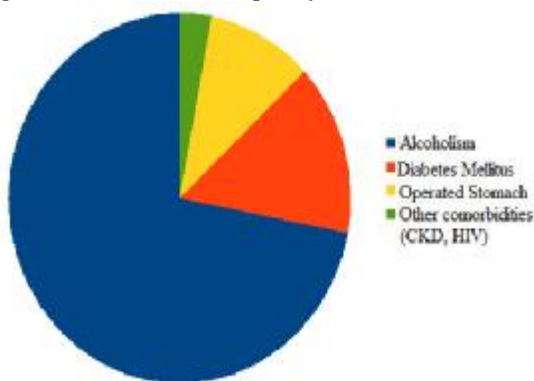
In terms of distribution by age, it has been found that MDR - TB prevalence is highest in the age group of 40-60 years old, the group of the active population, socially and professionally, with high potential of spreading the infection. Another important issue, in terms of epidemiology, refers to the MDR-TB outbreak contact of children and grandchildren of these patients. The only chemoprophylaxis is accepted is isoniazid 5mg / kg for 6 months, given that the forms of MDR-TB are resistant to treatment with isoniazid.

Table no. 2. Distribution of MDR –TB cases per age groups in Sibiu County between 01.2011-12.2014

Year	Age groups			
	<20 years old	20-40 years old	41-60 years old	>61 years old
2011	2	10	22	8
2012	3	15	17	0
2013	0	11	19	0
2014	0	13	16	0

In this study, it has been also analysed the association of MDR – TB with other comorbidities, resulting that it is more frequently encountered in heavy drinkers, patients with diabetes mellitus and operated stomach.

Figure no. 3. MDR – TB frequently associated diseases



As with sensitive forms of TB, MDR-TB forms are associated with diseases that decrease non-specific resistance of the organism to infections.

CONCLUSIONS

1. The number of MDR - TB cases is growing steadily every year globally, but in Sibiu County, the present study found a decrease in the prevalence of such cases during the study period.
2. MDR - TB cases are more common in male patients.
3. MDR - TB forms are more common in patients aged between 40 and 60 years old.
4. MDR - TB is more common in social cases, patients with no fixed address, in whom, it is difficult to monitor treatment in the evolution stage.
5. MDR - TB is more common in heavy drinkers, patients who frequently abandon the treatment. In our study, 70% of the male patients with MDR – TB, chronic alcoholism and smoking are associated.
6. Mortality in the patients with MDR - TB is three times higher than in the TB patients with H-, R- sensitive, who benefit from standardized treatment regimens recommended by the World Health Organization (WHO).
7. MDR - TB is more common in the patients with chronic TB, noncompliant to treatment and who refuse admission to specialized centres for the treatment of MDR - TB cases in Bucharest (within the Marius Nasta National Institute of Pneumology) and Bisericani (Neamț County).
8. HR secondary resistance gained through repeated therapeutic abandonment and subsequent treatments is the main cause of MDR - TB forms in adults, being more common than H, R primary resistance.
9. Chemoprophylaxis of contacts in MDR outbreak requires a new therapeutic approach.

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