AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

FREQUENCY AND CLINICO-DEMOGRAPHIC FEATURES OF MDR-TUBERCULOSIS

Aslonov I. Farrukh

Bukhara State Medical Institute, Bukhara, Uzbekistan

ORCID: https://orcid.org/0009-0002-8401-2721

Abstract: Tuberculosis remains the second leading cause of infectious mortality after COVID-19. In 2022, a total of 10.6 million cases and 1.3 million deaths were registered worldwide. Multidrug-resistant tuberculosis (MDR-TB) poses a serious threat due to the high prevalence of resistance among Mycobacterium tuberculosis strains. The aim of this study was to assess the frequency, demographic characteristics, and major clinical features of MDR-TB among patients in the Bukhara and Navoi regions of the Republic of Uzbekistan.

Materials and Methods

A total of 123 medical records of patients who underwent inpatient treatment between 2019 and 2023 were analyzed. The prospective group included 31 patients (25.2%), while the retrospective group comprised 92 patients (74.8%). The following parameters were evaluated: sex, age, detection of Mycobacterium tuberculosis (MBT), and distribution across the study groups. Descriptive statistics, the Mann–Whitney U test, and the χ^2 test were applied for statistical analysis.

Results

Table 1

Distribution of patients by sex across study groups

Group	Men (abs/%)	Women (abs/%)	Total
Main (n=31)	18 / 58,1%	13 / 41,9%	31
Control (n=92)	62 / 67,4%	30 / 32,6%	92
Total (n=123)	**80 / 65%**	**43 / 35%**	**123**

The results indicate that men constituted the majority in both the main group (58.1%) and the control group (67.4%). Despite the predominance of men, no statistically significant differences between the groups were found with respect to sex (P = 0.346), which indicates comparable samples and the absence of gender-related bias in the studied population.

Table 2

Mean age of patients in the study groups

Group	M	m

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

Group	M	m
Main (n=31)	54,63	11,42
Control (n=92)	54,14	9,82
Total (n=123)	54,62	10,2
Mann–Whitney (U)	**P = 0,449**	

The mean age in the main group (54.63 ± 11.42 years) and in the control group (54.14 ± 9.82 years) was nearly identical. Statistical evaluation (P = 0.449) confirmed the absence of significant age differences, suggesting a uniform age distribution across the sample.

Table 3

Frequency of Mycobacterium tuberculosis verification

Indicator	abs	M (%)
MBT detected	107	87%
MBT not detected	16	13%
Total	**123**	**100%**

These findings demonstrate a high rate of laboratory confirmation of MBT among patients with suspected tuberculosis—87% of cases. The 13% of negative results may be attributed to low bacterial load, technical limitations of diagnostic methods, or closed forms of the disease. The high proportion of verified cases underscores the reliability of the diagnostic methods used (microscopy, PCR, culture) and reflects the pronounced infectious burden in the studied cohort.

Table 4

Frequency of complications at admission

Complication	abs	M (%)
Without complications	30	24.4%
With complications	93	75.6%
– Respiratory failure	78	83.9%
– Pulmonary–cardiac insufficiency	11	11.8%
– Hemoptysis + respiratory failure	3	3.2%
– Pleurocirrhosis + respiratory failure	1	1.1%

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5. No 12. December ,2025

Most patients (75.6%) were admitted in a decompensated condition, reflecting delayed healthcare-seeking behavior and advanced disease progression. Respiratory failure was the most common complication (83.9%), indicating severe parenchymal involvement. Pulmonary-cardiac insufficiency was diagnosed in 11.8% of cases, reflecting marked hypoxia and increased strain on the pulmonary circulation. Hemoptysis and pleurocirrhosis were less frequent but their presence signifies destructive changes and progressive fibrotic involvement.

Discussion

The findings confirm the high prevalence of severe forms of MDR-TB at the time of presentation. The high rate of MBT detection highlights the importance of robust laboratory confirmation. The considerable number of complications indicates late presentation and underscores the need to strengthen early screening and patient referral systems.

Conclusion

MDR-TB is characterized by male predominance, a middle-aged patient population, a high frequency of laboratory-confirmed cases, and a substantial proportion of complicated forms at admission. These findings are essential for planning preventive strategies and improving early diagnosis of MDR-TB.

References:

1. Абдуганиева Э. А., Халмухаммедова С. М., Дадабаева Р. К. Влияние изменения образа жизни и характера питания на качество жизни пациентов с ХОБЛ //В сборнике: Особенности формирования здорового образа жизни: факторы и условия. – 2015.

2. Global tuberculosis report 2023. Geneva: World Health Organization; 2023.

3. Usmonov I.Kh., Muazzamov B.R., Jumaev M.F. Features of Diagnostics and Treatment of Drug-Resistant Forms of Pulmonary Tuberculosis. International Journal of Pharmaceutical Research. 2020;12(3).

4. Usmonov I.Kh. Clinical Course and Modern Diagnosis of Resistant Forms of Pulmonary Tuberculosis. American Journal of Social and Humanitarian Research. 2022;3:250–260.

5. Ergeshov A.E., Punga V.V., Rusakova L.I., et al. Туберкулёз с множественной и широкой лекарственной устойчивостью в РФ. Вестник Авиценны. 2018.

6. Tabernero Huguet E. Advances and Challenges in Multidrug-Resistant Tuberculosis Control. Open Respiratory Archives. 2024;6(3):100333.

7. Gu P., Lu P., Ding H., et al. Effectiveness, cost, and safety of four WHO-recommended regimens for RR/MDR-TB. Annals of Medicine. 2024;56(1):2344821.