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**EVOLIUCINĖ MEDICINA:
ŽMOGAUS RAIDOS PERSPEKTYVOS IR SVEIKATA
BESIKEIČIANČIOJE APLINKOJE**

**EVOLUTIONARY MEDICINE:
PERSPECTIVES ON HUMAN DEVELOPMENT AND HEALTH
CONSEQUENCES IN A CHANGING ENVIRONMENT**

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Vilniaus universiteto Medicinos ir sveikatos mokslų
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the Doctoral School of Medicine and Health sciences
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EVOLUTION FROM DRUG-SUSCEPTIBLE TO DRUG-RESISTANT TUBERCULOSIS: CLINICAL AND SOCIAL PREDICTORS IN A 22-YEAR NATIONAL COHORT

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Background and aim: Although most tuberculosis (TB) patients are diagnosed with drug-susceptible TB (DS-TB) and respond well to standard treatment, some develop acquired drug resistance (DS→DR-TB) during the disease course. Drug-resistant TB (DR-TB) requires longer, more complex, and costly treatment with poorer outcomes. To evaluate treatment outcomes among adults with DS-TB, who developed DR-TB (DS→DR-TB) (initial culture showing DS-TB followed by a subsequent culture confirming DR-TB). Treatment outcomes were classified as successful or unsuccessful (failure, chronic disease, or death).

Materials and Methods: Data were obtained from the National TB Information System (2000–2021). Among 37,713 pulmonary TB cases, 885 patients with culture-confirmed DS→DR-TB were included. Patients with missing data were excluded. Cases were grouped into three periods: 2000–2007, 2008–2015, and 2016–2021. Logistic regression identified predictors of unsuccessful outcomes.

Results: Successful and unsuccessful treatment rates over the periods:

Period I (n = 310): Successful treatment: 39.0%, Unsuccessful treatment: 61.0%

Period II (n = 175): Successful treatment: 60.0%, Unsuccessful treatment: 40.0%

Period III (n = 40): Successful treatment: 67.5%, Unsuccessful treatment: 32.5%

The distribution of patient groups based on treatment outcomes (p-value <0.001 between the periods):

Died from TB: Period I – 45.2%, Period II – 30.3%, Period III – 20%

Died from other causes: Period I – 12.3%, Period II – 5.1%, Period III – 12.5%

Treatment failure: Period I – 3.5%, Period II – 4.6%, Period III – 0.0%

Unsuccessful treatment in DS→DR-TB cases is significantly associated with various risk factors: homelessness, low education, unemployment, excessive alcohol consumption, smoking, TB relapse, older age, male sex, chronic

pulmonary disease, coronary heart disease, cancer, kidney disease, and HIV.

Conclusions: Treatment outcomes for DS→DR-TB improved substantially over two decades. Unsuccessful DS→DR-TB treatment was associated with persistent social vulnerability, harmful behaviours, prior TB treatment, comorbidities, and increasing drug resistance.

Keywords: drug-susceptible tuberculosis management, drug-resistance tuberculosis treatment outcome, tuberculosis risk factors