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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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THE STRATIFICATION OF PROGNOSIS IN ACUTE HEART FAILURE PATIENTS: THE EFFECT OF REHOSPITALIZATIONS AND OPTIMAL MEDICAL TREATMENT

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Background and Aim: Heart failure (HF) is a significant challenge for patients and the healthcare system, associated with poor quality of life, high morbidity and mortality. The aim of the thesis was to investigate the impact of rehospitalisations and optimal medical treatment on the prognosis of patients with acute HF (AHF).

Materials and Methods: In this dissertation, two patient cohorts from prospective acute dyspnoea observational studies from Lithuania and Switzerland and a cohort from a randomised clinical trial (RCT), which included AHF patients in 14 countries, were analysed. The relationship between rehospitalisations and mortality was investigated in the two observational cohorts. The impact of rapid up-titration of optimal medical HF treatment on 180-day heart failure readmission or all-cause mortality based on sex, baseline quality-of-life and presence of baseline anaemia was investigated in the RCT cohort.

Results: The 6-month readmission was associated with an increased risk of 1-year all-cause mortality in both Lithuanian and Swiss cohorts [adjusted hazard ratio (aHR) 3.0, 95% confidence interval (CI) 2.2–4.0, $P < 0.001$; aHR 1.8, 95% CI 1.4–2.2, $P < 0.001$, respectively]. The rapid up-titration of HF treatment reduced the risk of 180-day heart failure readmission or all-cause mortality compared to usual care in both men and women (interaction P value = 0.65), regardless of baseline quality-of-life as either a categorical (interaction P value = 0.58) or a continuous variable (interaction P value = 0.87) and presence of anaemia (interaction P value = 0.28) or haemoglobin as a continuous variable (interaction P value = 0.53).

Conclusions: Unplanned readmission during the first 6 months after discharge was associated with significantly increased 1-year mortality risk acute dyspnoea patients. Rapid up-titration of optimal medical treatment after AHF hospitalisation reduces 180-day all-cause death or heart failure readmission risk, regardless of sex, baseline quality-of-life and baseline anaemia.

Keywords: acute dyspnoea, acute heart failure, rehospitalisation, mortality