

Abstract for the Swiss Public Health Conference 2021

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Title: Development and validation of a new prognostic index for mortality risk in multimorbid adults

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BACKGROUND: Multimorbidity is highly prevalent among older adults and it is associated with a high mortality rate. Many guidelines recommend tailoring preventive care among multimorbid adults accounting for life expectancy and mortality risk. However, there is no tool to accurately predict mortality in patients with multimorbidity. Our objective is therefore to develop and internally validate a 1-year mortality risk prognostic index for older multimorbid adults.

METHODS: We analyzed data of the OPERAM (OPTimising thERapy to prevent Avoidable hospital admissions in Multimorbid older people) cohort study in Bern, Switzerland. 822 hospitalized participants aged 70 years old or more, with multimorbidity (3 or more chronic medical conditions), and polypharmacy (use of 5 drugs or more for >30 days) were included. Our main outcome is all-cause mortality assessed during 1 year of follow-up. We will develop and validate the mortality prognostic index following the Prognosis Research Strategy (PROGRESS) framework, and report it following the Transparent Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis (TRIPOD) statement. We will perform a Cox regression model with backward stepwise selection to identify the mortality risk predictors. The model will be internally validated using bootstrapping techniques. We will derive a point-based risk score from the regression coefficients.

RESULTS: Among 822 participants, 347 (42%) were women. At baseline, the participants had a median age of 79 years and a median chronic medication intake of 10 drugs. 528 (64%) patients showed a history of cardiovascular diseases (CVD) and 324 (39%) a history of cancer. Notably, individuals with cognitive impairment were included and 82 (10%) participants had a diagnosis of dementia. At one year of follow-up, the mortality cumulative risk was 19%. The analysis is ongoing and results will be presented at the congress.

IMPLICATIONS: Our new mortality risk index for multimorbid adults will help guideline developers to better tailor preventive care recommendations for this population. Our study uses high-quality prospective cohort data on multimorbid older patients which are not readily obtainable from administrative databases and registries.

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