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## **Impact of multimorbidity on clinical outcomes in older adults with cardiovascular disease**

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**Objective:** To synthesize the current literature on the magnitude and impact of multiple chronic conditions on clinical outcomes, including total in-hospital and post discharge mortality and hospitalizations, in older patients with cardiovascular disease (CVD).

**Methods:** A systematic review was conducted. Four electronic databases and article bibliographies were searched for publications from 2005 to 2015 which assessed the impact of multimorbidity on clinical outcomes in the elderly with CVD. Identified studies were screened using pre-defined criteria for eligibility.

**Results:** Fifteen studies met our inclusion criteria. Multimorbidity was assessed by simple counting of morbidities and by the Charlson and Elixhauser indices. Case-fatality rates ranged from between 13% and 21% for patients with a myocardial infarction. Long-term mortality ranged from 28% to 73% among patients with heart failure, and 24% of patients with heart failure and presenting multimorbidities had at least one readmission during a follow-up period of 17 months. Most of the studies reported a significant association between number of multimorbidities or particular morbidities and the risk of dying, the most frequent morbidities examined were diabetes, chronic kidney disease, anemia, chronic pulmonary disease and dementia/cognitive impairment

**Conclusions:** There are limited data on the magnitude and impact of multimorbidities on clinical outcomes, and even less data on patient centered outcomes among elderly patients with CVD. There are also inconsistencies in the manner by which multimorbidities are assessed; very few studies have approached the “real” complexity of patients with CVD and multimorbidities and how best to manage these high risk patients.

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