Abstract: P2262

Intensity and cost of health care at the end of life among patients with heart failure

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Background: Health care utilization increase towards the end of life. There is little known about the intensity of care, including use of in-hospital services, critical care units, and invasive procedures at the end of life in heart failure (HF).

Aims: To determine the type and intensity of health care services offered at the end of life to patients with HF, and to establish the determinants of and costs associated with death in the hospital versus at home.

Methods: We conducted a retrospective cohort study of adults (=18 years) who died between April 1, 2004 and March 31, 2017 in Ontario, Canada. We included decedents with a diagnosis of HF in the 2 years preceding their death and a hospitalization for HF in their last year of life. We obtained demographic, clinical, healthcare utilization, and healthcare cost data from population-based administrative databases, using unique encrypted identifiers to link records. We calculated direct costs from the perspective of the Ministry of Health in our publicly-funded healthcare system. We used descriptive statistics and a 2-level multivariable logistic regression model) with patients (1st level) nested in regions (2nd level) to assess for predictors of death in the hospital versus at home.

Results: We identified 396,024 adults with HF who died between April 1, 2004 and March 31, 2017. Mean (standard deviation [SD]) age at death was 81.8 (10.7) years, and 48.5% were men. During the last 6 months of life, patients commonly experienced hospitalizations (78.1%), care from >10 different physicians (62.2%); intensive care unit (ICU) admissions (26.4%); mechanical ventilation (18.1%); hemodialysis (6.2%); and cardiac catheterization (3.7%). In the last 6 months of life, patients spent a mean (SD) of 17.4 (23.0) days in the hospital; 2.5 (8.3) days in an ICU; and 1.6 (7.9) days on a ventilator. While the proportion of deaths at home increased from 32.6% in 2004-2005 to 38% in 2016-2017, a majority of patients (53.4%) died in hospital during the study period. Factors independently associated with in-hospital death included age (OR 0.53 [95% CI 0.51-0.55] for age >85 years vs < 60 years), sex (OR 0.88 [95% CI 0.87-0.89] for female vs male), and socioeconomic status (OR 0.87 [95% CI 0.85-0.89] for highest vs lowest income quintile). Palliative care services in the last 6 months of life was associated with higher odds of in-hospital death (OR 1.73 [95% CI 1.70-1.76]). Death in hospital was associated with higher mean [SD] healthcare costs in the terminal 6 months of life than death out of hospital ($52,349 [55,649] vs $35,943 [31,907]).

Conclusion: In this large cohort study in Ontario, Canada, patients with HF commonly received in-hospital, intensive, and invasive care in the last 6 months of life, and a majority of patients died in hospital. Death in hospital was associated with higher costs of care in the terminal 6 months than death outside hospital.