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This Article Corrects: "Identifying Patients at Greatest Risk of Mortality due to COVID-19: A New England Perspective"

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West J Emerg Med. 2020 November;21(6):295. Author name misspellled. The third author, originally published as Danyal Ibhrahim, MD, MPH is revised to Danyal Ibrahim, MD, MPH.

Abstract

Introduction: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread rapidly since December 2019, resulting in a pandemic that has, as of May 24, 2020, yielded over 5.3 million confirmed cases and over 340,000 deaths.[1] As businesses move to safely reopen and frontline healthcare workers (HCW) continue to face this crisis, it is essential that health officials know who in the population is at the greatest risk of mortality if hospitalized and, therefore, has the greatest need to protect themselves from being infected. We examined the factors that increase the risk of mortality among hospitalized COVID-19 patients.

Methods: This was a retrospective cohort study including confirmed COVID-19 patients admitted to the four Trinity Health of New England hospitals (THONE) in Connecticut and Massachusetts who either died or were discharged between March 1–April 22, 2020. Demographics, comorbidities, and outcomes of care were extracted from the electronic health record. A model of in-hospital mortality was made using a generalized linear model with binomial distribution and log link.

Results: The analysis included 346 patients: 229 discharged and 117 deceased. The likelihood of in-hospital mortality was increased for patients who were aged 60 or older (relative risk [RR] = 2.873; 95% confidence interval [CI], 1.733-4.764; p = <0.001), had diabetes (RR = 1.432; 95% CI,1.068-1.921; p = 0.016), or had chronic obstructive pulmonary disease (COPD) (RR = 1.410; 95% CI, 1.058-1.878; p = 0.019). Hyperlipidemia had a protective effect, reducing the likelihood of mortality (RR = 0.745; 95% CI, 0.568-0.975; p = 0.032). Sensitivity and specificity of the model were 51.4% and 88.4%, respectively.

Conclusions: Being age 60 or older or having a history of diabetes or COPD are the most useful risk factors associated with mortality in hospitalized COVID-19 patients. As states ease stay-at-home orders, risk factors of severe disease can be used to identify those more likely to have worse outcomes if infected and hospitalized and, therefore, who in particular should continue to follow public health guidelines for avoiding infection: stay home if possible; practice physical distancing; and wear a facemask.

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