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## Title

*The Impact of Initial COVID-19 Episode Inflammation Among Adults on Mortality Within 12 Months Post Hospital Discharge* 

## **Priority 1 (Research Category)**

COVID-19

### Presenters

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# Abstract

Context: Significant inflammation is present in a COVID-19 episode. Post-acute COVID-19 mortality is a concern after recovery from the initial episode. It is unclear if inflammation in the initial episode is associated with post-acute COVID-19 mortality.

Objective: The goal of this study was to determine the relationship between systemic inflammation in COVID-19 hospitalized adults and mortality after recovery from COVID-19.

Design, Setting, and Participants: An analysis of electronic health records (EHR) for patients from 1 January, 2020 through 31 December, 2021 was performed for a cohort of COVID-19 positive hospitalized adult patients. 1,207 patients were followed for 12 months post COVID-19 episode at one health system.

Main Outcome Measures: 12-month risk of mortality associated with inflammation, C-reactive protein (CRP), was assessed in Cox regressions adjusted for age, sex, race and comorbidities. Analyses evaluated whether steroids, anti-inflammatory medications, prescribed upon discharge were associated with later mortality.

Results: Elevated CRP was associated other indicators of severity of the COVID-19 hospitalization including, supplemental oxygen and intravenous dexamethasone. Elevated CRP was associated with an increased mortality risk after recovery from COVID-19. This effect was present for both unadjusted (HR=1.60; 95% CI 1.18, 2.17) and adjusted analyses (HR=1.61; 95% CI 1.19, 2.20) when CRP was split into high and low groups at the median. Oral steroid prescriptions at discharge were found to be associated with a lower risk of death post-discharge (adjusted HR = 0.49; 95% CI 0.33, 0.74).

Conclusions: Hyperinflammation present with severe COVID-19 is associated with an increased mortality risk after hospital discharge. Although suggestive, treatment with anti-inflammatory medications like steroids upon hospital discharge is associated with a decreased post-acute COVID-19 mortality risk.