

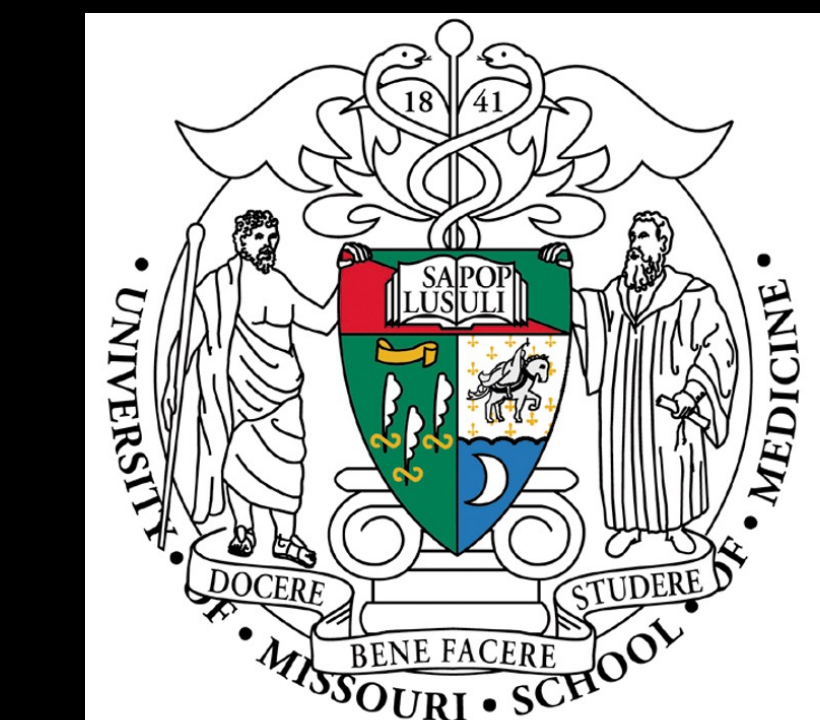


The Impact of Malnutrition on Patients Hospitalized with Clostridioides difficile

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BACKGROUND

- Clostridioides difficile infection (CDI) is the most common healthcare-related diarrhea and is associated with substantial morbidity and mortality.
- Malnutrition is common amongst patients with CDI, and some studies have suggested that it may increase CDI risk due to secondary immunodeficiency.
- The direct impact of malnutrition on patients who develop CDI has yet to be determined.
- We evaluated in-hospital outcomes of malnourished patients admitted to the hospital with CDI.

METHODS

- Retrospective study using 2016-2019 Nationwide Inpatient Sample (NIS)
- Adult hospitalizations with admitting diagnosis of CDI were identified and stratified based on nutritional status using International Classification of Diseases (ICD-10) codes
- Primary outcome was in-hospital mortality
- Secondary outcomes were intensive care unit (ICU) admissions, acute kidney injury (AKI) requiring dialysis, length of stay (LOS) and hospital charges.
- Multivariate regression analysis was used to adjust for confounding factors of outcomes.

RESULTS

- A total of 1,267,805 patients were admitted to the hospital with CDI during the study period.
- Of these, 15.17% of patients had a documented diagnosis of malnutrition.
- Patients with malnutrition had higher mortality, ICU admissions, AKI requiring dialysis, mean LOS, and hospital charges than those without malnutrition.
- Multivariate analysis: malnutrition was independent predictor of worse outcomes in patients with CDI.

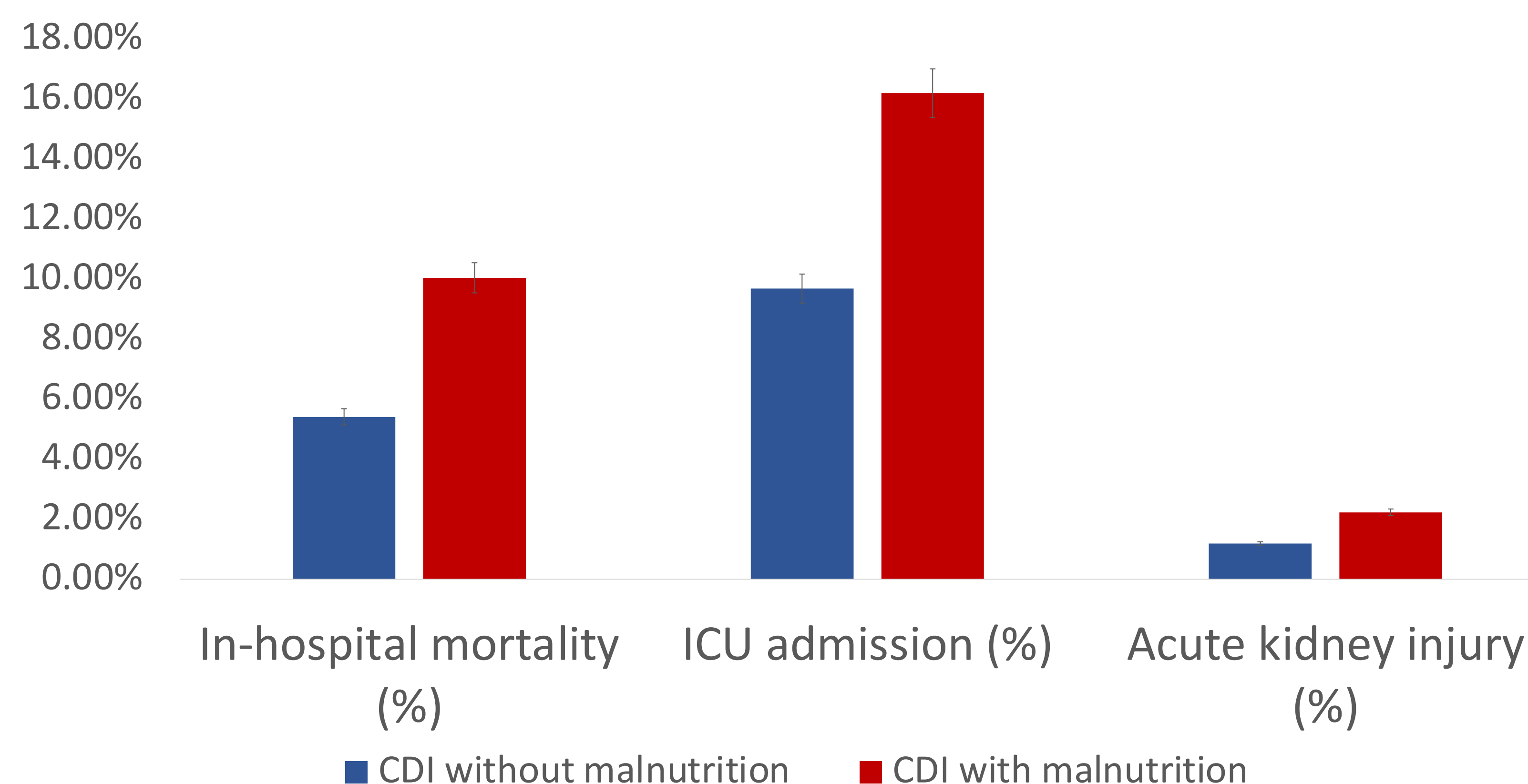


Figure 1: In-hospital categorical outcomes in patients with CDI with and without a diagnosis of protein energy malnutrition

Outcome	CDI without malnutrition	CDI with malnutrition (P value)	AOR (95% CI)
In-hospital mortality (%)	5.41%	10.04% (< 0.001)	1.77 (1.70 – 1.85)
ICU admission (%)	9.68%	16.19% (< 0.001)	1.69 (1.62 – 1.75)
Acute kidney injury (%)	1.19%	2.23% (< 0.001)	1.65 (1.51 – 1.80)
Mean length of stay (days)	9.05	14.89 (< 0.001)	5.48* (5.26 – 5.71)
Mean hospital charges (US\$)	91,822	161,665 (< 0.001)	64,150* (60,109 – 68,190)

* Adjusted mean difference
Abbreviations: CDI: spontaneous bacterial peritonitis, ICU: Intensive care unit, AKI: Acute kidney injury, CI: confidence interval, AOR: adjusted odds ratio

Table 1. In-hospital outcomes in patients admitted to the hospital with CDI with and without malnutrition

RESULTS (CONT.)

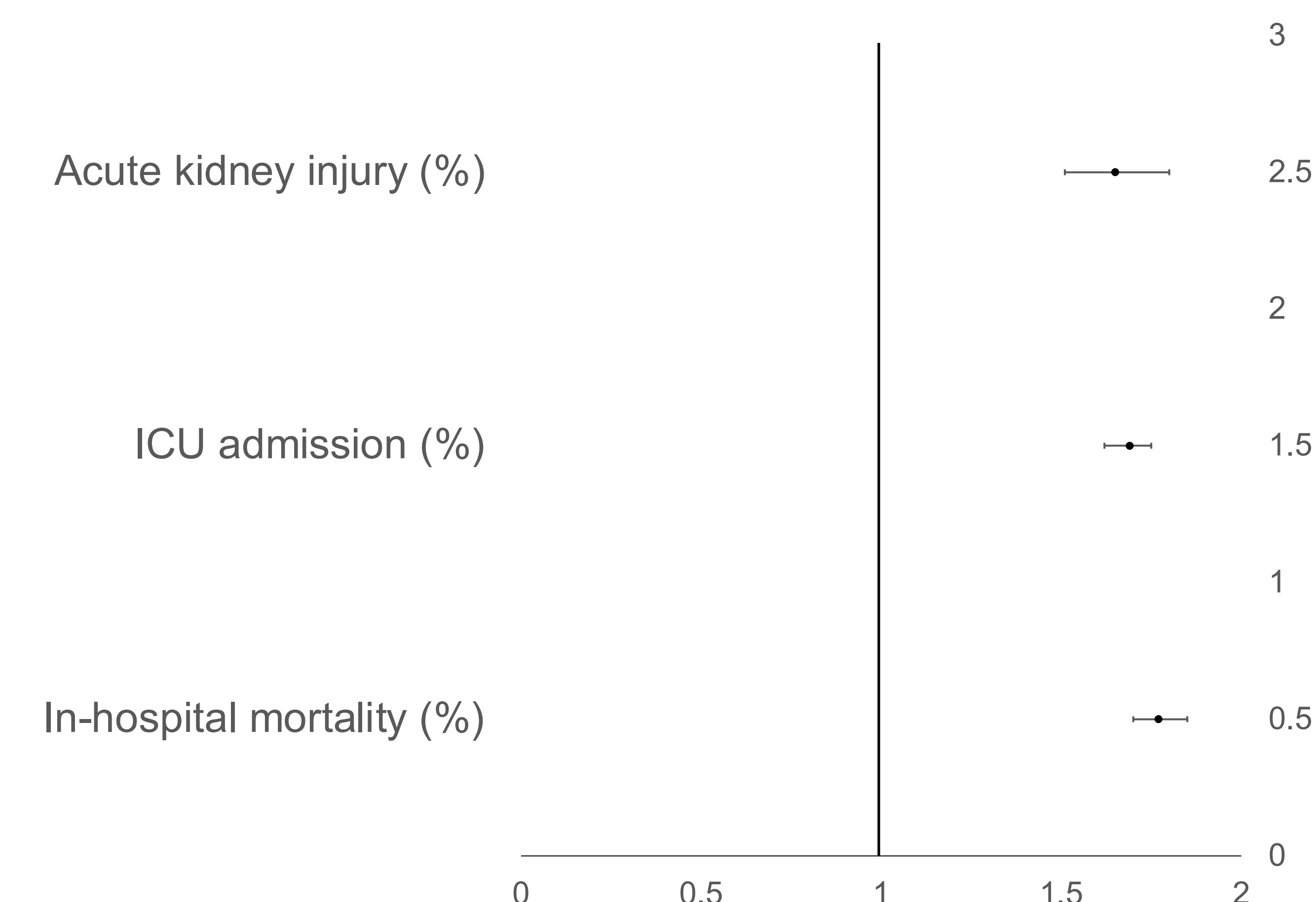


Figure 2: Adjusted odds ratio for outcomes in CDI patients who are malnourished

CONCLUSIONS

- Our results highlight the impact of malnutrition on patients admitted to the hospital with CDI.
- The increased in-hospital mortality and complications underline the importance of identifying malnourished patients as a higher-risk group
- For patients with or at increased risk of CDI, nutritional replenishment may be an important strategy to decrease rates of adverse health outcomes