

Mortality Predictors in Hospitalized *Clostridioides Difficile* Infection (CDI) Patients

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Background

The prevalence of *Clostridioides Difficile* infection (CDI) has been rising in the developed world over the past decade. In a recent study, CDI patients were more than twice at risk of dying than patients admitted for all other diagnoses. While there are data characterizing hospitalizations for CDI in the recent past, our study contributes current estimates from the National inpatient Sample (NIS) database to look for mortality predictors in patients admitted with a primary diagnosis of CDI.

Methods

We looked at hospitalizations during 2019 from the National Inpatient Sample (NIS), Healthcare Cost and Utilization Project, and Agency for Healthcare Research and Quality. We identified Adult patients admitted for *Clostridium Difficile* (C.diff) infection using the International Classification of Diseases, 10th revision, clinical modification codes:

Methods (cont'd)

A04.71 and A04.72. StataCorp Stata was used to perform logistic multivariate regression analyses to compare demographic factors such as sex, age, race, and payer status. Clinical parameters such as a history of, or concurrent HIV, Colon Cancer, and Sepsis were also Analyzed.

Results

A total of 73,799 adult patients were admitted with C. diff as a primary diagnosis on a non-emergency basis. Among them, 47090 (63%) were females. The mean age of the patient population was 66.6 years and the mean length of hospital stay was 5.3 days. Among the total hospitalized patients, 1024 (1.3%) died. The patient's race didn't have a statistically significant association with CDI. Female gender was associated with decreased mortality when compared to males with an odds ratio (OR) of 0.6 (95% CI: 0.5 to 0.9; $p < 0.01$). Interestingly, no statistically significant association was found between a history of or concomitant colon cancer and HIV. A remarkably strong correlation was seen in the mortality of C. diff patients with sepsis when compared to patients with no sepsis (OR - 18.5; 95% CI:13.5-25.2; $p < 0.01$).

Discussion

Clostridioides Difficile infection (CDI) is a major cause of healthcare-associated diarrhea with high mortality. The known CDI risk factors are antibiotic use, age older than 65 years, inflammatory bowel disease, organ transplantation, chemotherapy, chronic kidney disease, and immunodeficiency. In our study, CDI hospitalization rates were highest in the elderly. The average age for patients admitted with CDI as a principal diagnosis was 66 years, almost 19 years older compared to hospitalizations due to other causes. Sepsis was associated with higher mortality and the female gender was associated with lower mortality. Contrary to the common perception, HIV and underlying colon cancer did not predict mortality. Although in previous studies, patients admitted with CDI were more likely to be females, gender was not an independent risk factor for mortality in our study [1,2].

References

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