

# Impact of Clostridium Difficile Infection on Inpatient Outcomes of Acute Pancreatitis: A Nationwide study

Eun Seo Kwak<sup>1</sup>, Nahush Bansal<sup>1</sup>, Keith Burns<sup>2</sup>, Nooraldin Merza<sup>1</sup>, Sahithi Chinnam<sup>1</sup>, Tony Dong<sup>3</sup>, Emily Moore<sup>3</sup>, Yaseen Alastal<sup>4</sup>

<sup>1</sup>Resident, Division of Internal Medicine, Department of Medicine, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

<sup>2</sup>Resident, Division of Gastroenterology, Department of Medicine, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

<sup>3</sup>College of Medicine and Life Sciences, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

<sup>4</sup>Assistant Professor, Program Director of the Gastroenterology Fellowship, Division of Gastroenterology, Department of Medicine, 3000 Arlington Avenue, The University of Toledo, Toledo OH 43615

Email: ekwak2@rockets.utoledo.edu

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**Background:** Clostridium difficile infection (CDI) is linked to unfavorable outcomes in hospitalized adults. Patients with acute pancreatitis (AP) are frequently admitted to the hospital and may be at risk for CDI due to antibiotic exposure. We investigated the healthcare outcomes of CDI in individuals with AP.

**Methods:** The National Inpatient Sample (NIS) 2020 Database was analyzed for adult patients with acute pancreatitis as the primary discharge diagnosis and clostridium difficile infection as a secondary discharge diagnosis, identified using ICD-10 codes. The primary outcome measured was inpatient mortality, with secondary outcomes including length of stay (LOS), hospitalization charges, acute kidney injury, acute respiratory failure, severe sepsis, and septic shock. Multivariate logistic and linear regression analyses were employed to adjust for confounders. Statistical analyses were conducted using STATA software.

**Results:** Out of 258,965 patients admitted with acute pancreatitis, 1632 (0.64%) were identified as having clostridium difficile infection. The inpatient mortality in AP patients with CDI, compared to those without CDI, was adjusted odds ratio, 2.14; 95% CI (1.18-6.39, p=0.019). AP patient with CDI had longer length of stay 11.51 (10.19-12.83, p<0.001) and hospitalization charges \$125846.9 (103885.1-147808.6,

p<0.001), as well as increased odds of acute kidney injury 2.11 (1.60-2.78, p<0.001), acute respiratory failure 5.56 (4.11-7.53, p<0.001), severe sepsis 9.34 (5.85-14.91, p<0.001) and septic shock 9.33 (5.39-16.12, p<0.001).

**Conclusions:** These results suggest that acute pancreatitis patients with clostridium difficile infection have significantly higher odds of mortality, acute kidney injury, acute respiratory failure, severe sepsis, and septic shock compared to those without clostridium difficile infection.

**Keywords:** Clostridium Difficile, Acute Pancreatitis, National Inpatient Sample, Inpatient Mortality

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