

## Certain type of colitis now more common, severe among hospitalized patients

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The rate of cases of colitis (colon inflammation) caused by the bacteria *Clostridium difficile* more than doubled among patients hospitalized in the United States between 1993 and 2003, and the illness was more severe and associated with an increased mortality rate, according to a report in the July issue of *Archives of Surgery*, one of the JAMA/Archives journals.

*C. difficile* inhabits the intestines of approximately 1 percent to 3 percent of healthy adults and about 20 percent of patients receiving antibiotics, according to background information in the article. When the balance of bacteria in the colon is altered, *C. difficile* can cause a variety of symptoms, including severe or complicated diarrhea that may eventually lead to death. Treatment for life-threatening forms of the disease usually involves colectomy, or removal of all or part of the colon, which is associated with a high rate of complications and high mortality. “Three million new cases of *C. difficile* colitis occur in the United States each year: as many as 10 percent of patients hospitalized for at least two days are affected,” the authors write. “Anecdotal evidence and some case series suggest that *C. difficile* colitis has become more common and potentially more pathogenic.”

Rocco Ricciardi, M.D., M.P.H., then of the University of Minnesota Medical School, Minneapolis, and now of Lahey Clinic, Burlington, Mass., and colleagues analyzed discharge data from a database of U.S. hospitals between 1993 and 2003. The database, the Nationwide Inpatient Sample, “includes data from about 7 million hospital stays per

year in 1,000 hospitals located in 35 states; thus, it approximates a 20 percent stratified sample of U.S. community hospitals,” the authors write. “It provides information on patient demographics, socioeconomic factors, admission profiles, hospital profiles, state codes, discharge diagnoses, procedure codes, total charges and vital status at hospital discharge.”

In the 78,091,119 discharges that occurred in the 11-year study period, 299,453 patients had a diagnosis of *C. difficile* colitis, a rate of 383 cases per 100,000 discharged patients. “The rate of *C. difficile* colitis discharges increased from 261 cases per 100,000 discharged patients in 1993 to 546 cases per 100,000 discharged patients in 2003, a 109 percent increase,” the authors write. Colectomy rate, which was 2.7 per 1,000 patients overall, increased from 1.2 per 1,000 patients in 1993 to 3.4 per 1,000 patients in 2003. The total rate of death among patients with *C. difficile* colitis was 33.6 deaths per 100,000 discharged patients throughout the study; this rate increased 147 percent in 11 years, from 20.3 deaths per 100,000 discharged patients in 1993 to 50.2 deaths per 100,000 discharged patients in 2003.

“Hospital discharge with a *C. difficile* diagnosis was significantly more likely with increasing calendar year,” the authors continue. “In addition, the likelihood of death and of treatment with colectomy also significantly increased over time.”

The results document the changing nature of *C. difficile* colitis but do not offer explanations for the change, the authors note. The shift could be caused by new strains of the bacteria, its increasing resistance to antibiotics or the increasing severity of illness and therefore susceptibility to infection among hospitalized patients in the United States.

“Heightened awareness of the increasing disease burden of *C. difficile*

colitis is an important first step in controlling the public health ramifications of this important and morbid nosocomial [hospital-acquired] infection,” they conclude.

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Source: JAMA and Archives Journals

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