Correspondence

Risk Factors for Mortality in Patients With Clostridium difficile Infection

To the Editor—We read with great interest the recent article by Morrison et al indicating that acid suppression increases mortality in Clostridium difficile infection [1]. The study also showed increased mortality associated with advanced age and corticosteroid use.

Acid suppression has been shown to be associated with the risk of C. difficile infection after adjusting for comorbidities [2]. We missed data on patient comorbidities in the study by Morrison et al [1]. The effect of acid suppression was not adjusted for the effect of underlying diseases, McCabe class, or infecting C. difficile strain. Previous studies have shown that comorbidities such as liver cirrhosis are associated with poor outcome in C. difficile infection [3, 4]. One recent study has shown that patients with cirrhosis and C. difficile infection had greater mortality, hospital length of stay, and hospitalization charges compared with those of patients with cirrhosis or C. difficile infection alone [3]. Acid suppression is common in patients with liver cirrhosis and in those with multiple underlying diseases, and aging is associated with increased risk of comorbidities. Prior acid suppression is frequently associated with corticosteroid use which, in turn, is associated with inflammatory diseases such as rheumatoid diseases.

A hypervirulent C. difficile strain type has been shown to be associated with severe outcome in C. difficile infection, and mortality has been shown to be highest in the oldest age group of patients [5–6]. It may be difficult to determine the mortality attributable to C. difficile infection in a group of patients with several potential comorbidities. There are multiple possibilities for biases in evaluating the effects of various factors on outcome of infection in the elderly. Attributable and crude mortality may differ considerably from each other. It is difficult to assess the independent roles played by various factors in the outcome of C. difficile infection in a patient group, in which the course of infection is frequently accompanied by, for example, acute coronary syndrome or traumatic hip fractures due to general weakness or disability. Studies assessing the outcome of C. difficile infection have been heterogeneous in reporting underlying diseases, and several experts have required that studies reporting mortality should adhere to uniform standards so that results can be compared. Some experts suggest the use of a comorbidity score such as the Charlson comorbidity index or McCabe class [6, 7].

Note

Potential conflicts of interest. All authors: No reported conflicts.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

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