

ORAL PRESENTATION

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US costs and outcomes associated with *Clostridium difficile* infections: a systematic literature review, meta-analysis, and mathematical model

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Introduction

An understanding of the health and economic impact of *C. difficile* infections (CDI) can inform investments in prevention and treatment interventions.

Objectives

To estimate the burden of CDI in the US using a meta-analysis and economic model.

Methods

We searched PubMed, CINAHL, EMBASE and others for multicenter studies published in the US between 2000-2014 that evaluated CDI outcomes or costs. Studies were included in the economic analysis if they measured post-infection costs, post-infection length of stay (LOS), or propensity score-matched CDI patients to non-CDI controls. We also included studies that evaluated CDI-associated mortality with a control group. We created an economic model using TreeAgePro 2014.

Results

When the 22 studies that evaluated mortality were pooled, CDI was associated with a 2.5-fold increase in mortality compared with other hospitalized patients (pooled RR=2.54; 95% CI: 1.89, 3.40). Only 4 low/moderate quality studies evaluated costs of CDI. The mean CDI-attributable cost of the index hospitalization ranged from \$8,426 to \$48,500. The mean costs per CDI after discharge were \$1,592 for outpatient visits and \$14,847 for readmissions. When these values were adjusted to 2013 US dollars and included in the economic model,

we found that the mean total cost of a CDI was \$32,198 (SD = \$9,798). Of the 3 studies that evaluated LOS using propensity matching, the mean CDI-attributable LOS was 12.3 days. When this excess LOS was multiplied by an average cost per day from a private 3rd party payer perspective, CDI cost an average of \$56,663 (SD = \$19,804).

Conclusion

Pooled estimates from the currently available literature suggest that CDI is associated with large health and economic burdens. However, the majority of available studies were of moderate/low quality and may overestimate the outcomes. Thus, these estimates should be used with caution and higher-quality studies should be completed to guide future economic evaluations of CDI prevention and treatment interventions.

Disclosure of interest

None declared.

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