Cost-Effectiveness of Fidaxomicin for Clostridium difficile Treatment

TO THE EDITOR—Bartsch and colleagues recently evaluated the cost-effectiveness of fidaxomicin treatment for *Clostridium difficile* infection and should be commend- ed for addressing this important question [1]. In light of a recent Centers for Disease Control and Prevention report estimating 250 000 *C. difficile* infections per year resulting in 14 000 deaths and excess medical costs of $1 billion annually [2], understanding the economic value of *C. difficile* prevention and treatment strategies has major public health implications in the United States. The authors compared a strategy of NAP1/BI/027 strain-targeted fidaxomicin treatment compared to metronidazole or vancomycin treatment depending on disease severity and found an unfavorable cost-effectiveness ratio of $46 million per quality-adjusted life-year (QALY) for the fidaxomicin strain-targeted approach. The authors concluded that fidaxomicin is not cost-effective at current pricing and national prevalence estimates of *C. difficile* strain type NAP1/BI/027. Another recently published cost-effectiveness analysis on this topic had different findings: Stranges and colleagues found significantly more favorable cost-effectiveness ratios of $68 000 per QALY for fidaxomicin compared with vancomycin and $41 000 per QALY when fidaxomicin was compared to metronidazole for mild/moderate *C. difficile* infection [3]. This study did not evaluate a strain-targeted treatment strategy, but when the strain type was assumed to be NAP1/BI/027, results changed, and fidaxomicin was dominated (more costly and less effective).

Both models incorporated similar estimates of treatment efficacy from the same clinical trial data [4], and the estimates for fidaxomicin cost ($2800–$3360) were not significantly different. One potentially important difference may relate to the QALY weights used to represent the adverse impact of *C. difficile* on quality of life. If fidaxomicin prevents more episodes of recurrent *C. difficile*, cost-effectiveness results will favor fidaxomicin when this adverse impact is greater. As there are no formal studies on quality of life among patients with *C. difficile* infection, both investigators used estimates from chemotherapy-associated diarrhea [5, 6]. The values used in Stranges’s model assumed more severe adverse quality-of-life effects compared with those used in Bartsch’s model. In addition, Stranges and colleagues incorporated *C. difficile*-associated complications such as colectomy and mortality in calculating QALYs, whereas Bartsch and colleagues did not include these outcomes. Bartsch et al acknowledged that their estimates likely underestimate the severity of *C. difficile*-associated diarrhea, but they did not report sensitivity analyses on quality of life, symptom duration, or the number of recurrent episodes. Future work to better quantify *C. difficile*-associated impairments in quality of life will be critical in evaluating the cost-effectiveness of emerging *C. difficile* treatment strategies such as monoclonal antibodies and fecal microbiota transplant.

Note

Potential conflicts of interest. Author certifies no potential conflicts of interest.

The author has 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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References