An Economic Analysis: Is Fidaxomicin Worth the Cost?

TO THE EDITOR— We recognize the efforts by Bartsch et al [1] to evaluate fidaxomicin (DIFICID). The conclusions drawn by the authors, however, warrant reexamination in light of numerous clinical and methodological problems.

Clinically, the “all-or-none” treatment approach used in the decision model does not accurately represent real-world treatment patterns. The model assumes if a treatment fails, a second course will be effective, thus biasing the results toward a relatively ineffective first-line treatment.

The severity classification used by the authors also limits the applicability of this model and does not reflect Society for Healthcare Epidemiology of American/Infectious Diseases Society of America guidelines, nor does it provide a reliable way to classify patients at the onset of treatment [2].

Given the efficacy data in Table 1 [1], it should be mathematically impossible to derive the result that fidaxomicin is less effective. It seems likely that there is a typographical error in either the table or model calculations, or both.
The selection of a NAP1/BI/027 frequency of 50% considerably overestimates the burden of this strain of C. difficile. Current estimates of 22%–34% suggest that the prevalence of the BI strain is declining, with the United States likely experiencing a period of endemicity rather than epidemicity and outbreaks [3–5].

We also question the use of utility weights for noninfectious diarrhea (range, 0.817–0.92, Table 1 [1]) as a proxy for C. difficile–associated diarrhea (CDAD). The values in Table 1 present a situation where the utility for nonsevere disease (0.88) is higher than the baseline utility for patients aged ≥65 years (0.84). If this were true, a patient aged ≥65 could potentially have improved quality of life when experiencing an episode of nonsevere CDAD. Other potential, more appropriate utility probabilities can be found in the Tufts Cost-Effectiveness Analysis Registry [6]. Using inaccurate or widely disparate utility values in Table 1 present a situation where the utility for nonsevere disease (0.88) is significantly higher than the baseline utility for patients aged ≥65 could potentially have improved quality of life when experiencing an episode of nonsevere CDAD. Other potential, more appropriate utility probabilities can be found in the Tufts Cost-Effectiveness Analysis Registry [6].

Using inaccurate or widely disparate utility values can significantly magnify errors in output [7].

Finally, we draw attention to the independently conducted economic analysis of fidaxomycin vs vancomycin recently published by Stranges et al in Value in Health [8]. The two models share several efficacy and cost parameters, the inputs for which vary substantially. The significantly different inputs, combined with a more appropriate clinical scenario, produced a very different cost per quality-adjusted life-year of $67 576, substantially lower than Bartsch et al’s $43.7 million [1, 8].

We recognize the complexity of modeling treatment patterns in C. difficile infection; however, several inappropriate clinical and methodological assumptions significantly limit the value of this work.

Note

Potential conflicts of interest. All authors are current employees of Optimer Pharmaceuticals.

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References


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