Proactive choice of antibiotic may reduce the risk of Clostridioides difficile infection

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Background

CDI is the leading cause of healthcare-associated infections, with an estimated 2.34 cases per 1,000 hospital admissions per year9. Use of antibiotics such as fluoroquinolones, cephalosporins, and clindamycin is associated with increased risk of CDI4. This is of particular concern given the wide use of ceftriaxone and levofloxacin/moxifloxacin (prominent members of these drug classes) in treating community-associated infections.

Multiple action plans and initiatives have been introduced to reduce CDI rates, including antibiotic stewardship programs, national surveillance and action plans, improved testing, and enhanced infection control7-10. Risk of CDI was also balanced for each of the individual CDI risk scores, with overlapping 95% confidence intervals between treatments (Figure 2).

Results

Omadacycline and moxifloxacin groups included 386 and 388 patients, respectively. Risk of CDI was balanced across both treatment groups, with overlapping mean and variance distributions (Figure 1)

Mean risk score: omadacycline, 4.02 (standard deviation: 1.35); moxifloxacin, 4.12 (standard deviation: 1.43).

Risk of CDI was also balanced for each of the individual CDI risk scores, with overlapping 95% confidence intervals between treatments (Figure 2).

Observed occurrence of CDI was not balanced between treatment groups:

- Eight cases of CDI were reported in the moxifloxacin group
- No cases of CDI were reported in the omadacycline group (p=0.0037)

Conclusions

Despite equal risk across the two treatments, no cases of CDI were seen with omadacycline treatment, whereas eight cases occurred in the moxifloxacin group. The results from this analysis may indicate a lower propensity to induce CDI with omadacycline, compared with moxifloxacin treatment.

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