**ABSTRACT**

- Although estimates vary widely, the economic cost of carbapenem resistance in United States (US) hospitals is $20 billion per year with direct healthcare costs and productivity costs, respectively.
- Carbapenem-resistant Enterobacteriaceae (CRE) is a global threat, with the potential to spread worldwide and are considered an urgent antimicrobial resistance threat.
- Carbapenem-resistant Enterobacteriaceae (CRE) infections continue to rise worldwide and are a potential new option for select carbapenemase-producing Enterobacteriaceae, and is a potential new option for select carbapenemase-producing Enterobacteriaceae.

**INTRODUCTION**

- The specific economic value of meropenem-vaborbactam will vary based on the institutional level based on current antimicrobial stewardship practices, treatment patterns, and institutional prevalence and resistance patterns associated with CRE.

**METHODS**

- Two decision analytic models, a budget impact model and cost-effectiveness analysis were developed to examine the budget impact and cost-effectiveness of meropenem-vaborbactam (M-V) compared to ceftazidime-avibactam (C-A) in the US healthcare setting.

**RESULTS**

- Total per-patient costs were estimated to be approximately $31,978 with meropenem-vaborbactam and $32,513 with ceftazidime-avibactam; well in line with published estimates of per-patient costs associated with CRE.
- The model results indicate that M-V is likely to be associated with a higher budget impact and high cost-effectiveness for the treatment of CRE infections.

**CONCLUSION**

- The model results indicate that M-V is likely to be associated with a higher budget impact and high cost-effectiveness for the treatment of CRE infections.

**TABLE 1: KEY MODEL INPUTS**

**FIGURE 1: MODEL STRUCTURE**

**FIGURE 2: TOTAL ANNUAL BUDGET IMPACT, MEROPENEM-VABORBACTAM (M-V) VS. CEFTAZIDIME-AVIBACTAM (C-A) IN US HOSPITALS**

**FIGURE 3: INCIDENCE OF KEY CLINICAL OUTCOMES, MEROPENEM-VABORBACTAM (M-V) VS. CEFTAZIDIME-AVIBACTAM (C-A)**

**FIGURE 4: INCIDENCE OF KEY CLINICAL OUTCOMES, MEROPENEM-VABORBACTAM (M-V) VS. CEFTAZIDIME-AVIBACTAM (C-A)**

**REFERENCES**

- These model results indicate that M-V is likely to be associated with a higher budget impact and high cost-effectiveness for the treatment of CRE infections.

- The specific economic value of meropenem-vaborbactam will vary based on the institutional level based on current antimicrobial stewardship practices, treatment patterns, and institutional prevalence and resistance patterns associated with CRE.

- Limitations: Analyzes are conducted from the US hospital perspective. The model considers initial hospital costs and charges. The study does not capture outpatient or long-term care costs accrued post-discharge.

- The potential impact of delay in starting the appropriate antimicrobial treatment on cost or mortality is not captured at this time.

- The efficacy of each antibiotic is extrapolated from a combination of patients with CRE by using the assumptions made in the model, such as clinical monitoring, antibiotic dose adjustments, or treatment duration.

- The model is limited by the lack of head-to-head trial data for meropenem-vaborbactam and ceftazidime-avibactam. Published data from a retrospective, single-arm, single institution study is used (81/17). After comparing the baseline characteristics of the study populations, it was determined that the similarities and assumptions made in the model, such as clinical monitoring, antibiotic dose adjustments, or treatment duration.

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**TABLE 1: KEY MODEL INPUTS**

- Total Annual Cost
- Hospitalization + Treatment failure + Renal failure
- $898,221
- $968,810

- Cost Savings
- $70,589

- Meropenem-vaborbactam
- Avycaz®