

DORIPENEM VERSUS IMIPENEM IN VENTILATOR-ASSOCIATED PNEUMONIA: A COST-EFFECTIVENESS ANALYSIS

PHC011

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PURPOSE

- ✓ Ventilator-associated pneumonia (VAP) has high impact on costs and resources at hospitals. Correct antibiotic use could reduce mortality and decrease length of stays.
- ✓ Acquisition cost of doripenem is higher than imipenem but has better health outcomes.
- ✓ To estimate a cost-effectiveness analysis of doripenem versus imipenem in empiric treatment of VAP.

MATERIALS AND METHODS

- ✓ A simulated decision tree for cost-effectiveness analysis.
- ✓ It took into account: rescue antibiotic therapy and all end results (include mortality and drug adverse reactions).
- ✓ We considered separately the main seven microorganisms causing VAP in our country and the rest were considered together.
- ✓ Population studied: 10000 simulated patients-in Intensive Care Unit with empirical treatment for VAP (64 outcomes each one).
- ✓ Perspective : hospital
- ✓ Time horizon: < 1 year.
- ✓ Probabilities of event and VAP aetiology were extracted from clinical trials and database respectively.
- ✓ Costs (€ 2011) included the antibiotic options (Doribax® and Generic imipenem), rescue treatment, length of stay, administration supplies and personnel costs, and DRG (diagnosis-related groups) cost for each event.
- ✓ Different scenarios were tested in deterministic and stochastic sensibility analysis.

RESULTS

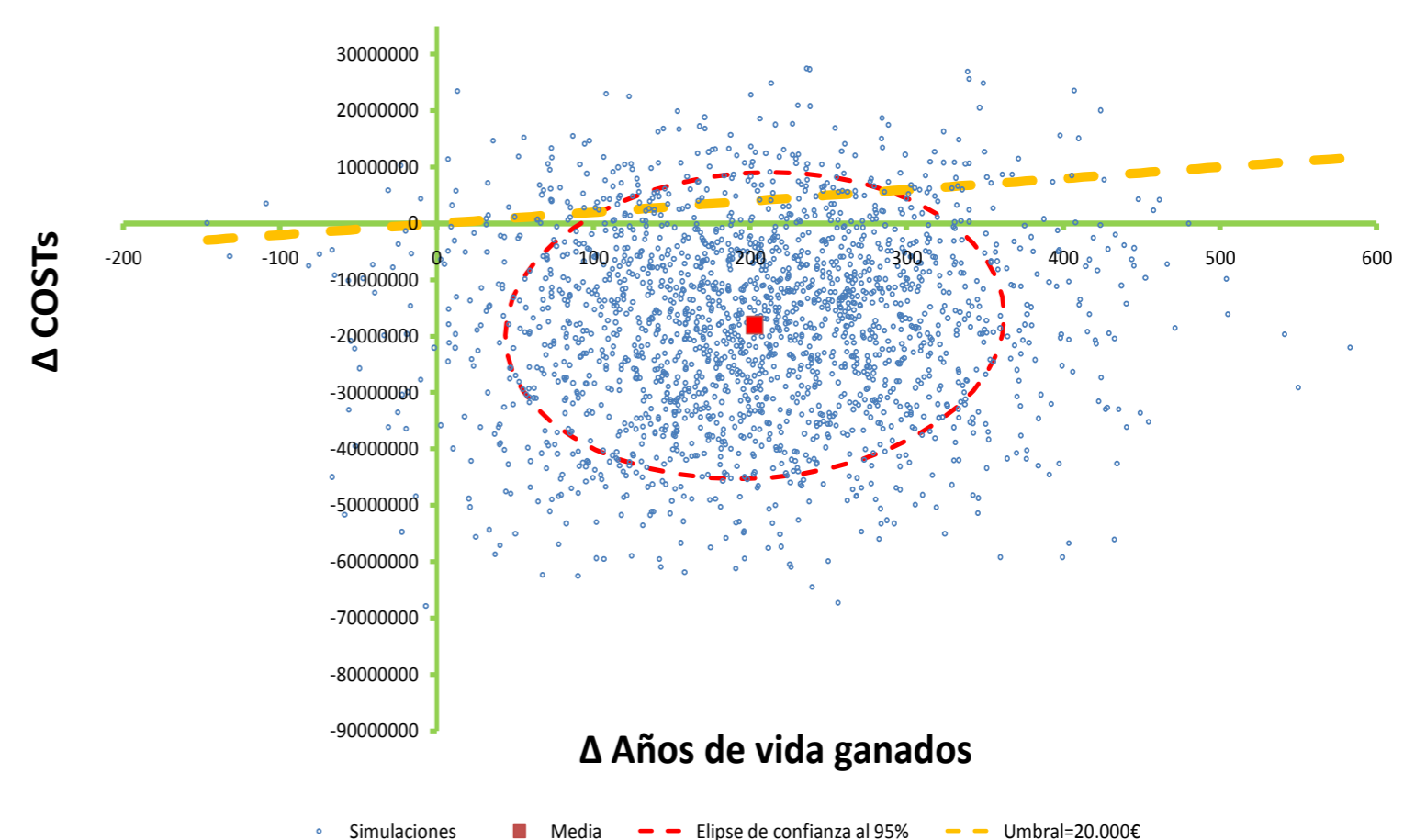
DETERMINISTIC: ICER for 10000 patient was -12755.63 €/patient survived.

- ✓ Total cost were 8693.03 €/patient and 9063.59 €/patient for doripenem and imipenem respectively.
- ✓ Patient survived in each group were 9711.14 for doripenem and 9420.63 for imipenem.
- ✓ In the two scenarios it was up to threshold (20000€):
 - ✓ a) imipenem had similar length of stay than doripenem
 - ✓ b) considered MARSA as single microorganism causing the infection.

PROBABILISTIC: RCEI for 2000 Monte-Carlo simulations of -391762.10 (SD: 350012.96) €/patient survived.

- ✓ Up than 80% simulations, imipenem was dominated.

Cost-effectiveness diagram.



CONCLUSIONS

- ✓ Doripenem is a better cost-effectiveness option than imipenem for VAP empirical treatment.