

ABSTRAK

**PERBEDAAN PERUBAHAN NILAI MIC COLISTIN, MIC MEROPENEM
DAN KOMBINASI COLISTIN DAN MEROPENEM PADA ISOLAT
Carbapenem Resistant Acinetobacter baumannii IN VITRO Di RSUD Dr.
SOETOMO**

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Latar belakang: *Carbapenem resistant Acinetobacter baumannii* merupakan salah satu bakteri yang sulit untuk diterapi serta menjadi perhatian nasional dan internasional karena merupakan salah satu penyebab *Health care associated infection* (HAI). Meningkatnya angka infeksi akibat *carbapenem resistant Acinetobacter baumannii*, dan semakin terbatasnya pilihan antimikroba akibat munculnya strain yang resisten terhadap beberapa kelas antimikroba maka penelitian ini bertujuan untuk menentukan adanya perbedaan nilai MIC colistin, MIC meropenem antara sebelum dan sesudah kombinasi secara *in vitro* di RSUD Dr Soetomo.

Metode: Penelitian ini merupakan penelitian eksperimental laboratories dengan sampel penelitian 19 isolat *Carbapenem Resistant Acinetobacter baumannii* yang sudah teridentifikasi dari mesin phoenix. Isolat diuji kepekaannya terhadap konsentrasi colistin 0,25 µg/ml, 0,5 µg/ml, 1 µg/ml, 2 µg/ml, 4 µg/ml, 8 µg/ml, 16 µg/ml dan konsentrasi meropenem , 1 µg/ml, 2 µg/ml, 4 µg/ml, 8 µg/ml, 16 µg/ml, 32 µg/ml, 64 µg/ml, 128 µg/ml, serta kombinasinya dengan metode *checkboard synergic test*.

Hasil penelitian: Dari 19 isolat CRAB, 4 isolat *susceptible* colistin dan 15 isolat resisten colistin. Kombinasi colistin dan meropenem yang menghasilkan MIC paling banyak adalah pada konsentrasi colistin 4 µg/ml dan meropenem 1 µg/ml yaitu 10 isolat. Dari 19 isolat resisten meropenem setelah dikombinasikan dengan colistin 14 isolat (73,7%) menjadi *susceptible* terhadap meropenem

Kesimpulan: Terdapat perbedaan penurunan nilai MIC meropenem antara sebelum dan sesudah kombinasi. Sedangkan pada colistin tidak didapatkan perbedaan penurunan nilai MIC antara sebelum dan sesudah kombinasi.

Kata kunci : *carbapenem resistant Acinetobacter baumannii*, *Checkboard synergic test*, *colistin*, *meropenem*

ABSTRACT

DIFFERENCE VALUE CHANGE OF MIC COLISTIN, MIC MEROPENEM AND COLISTIN AND MEROPENEM COMBINATION IN Carbapenem Resistant *Acinetobacter baumannii* IN VITRO IN DR SOETOMO HOSPITAL

Nurima Diyah P. H

Background: *Carbapenem-resistant Acinetobacter baumannii* is one of the bacteria that is difficult to treat and is a national and international concern because it is one of the causes of Healthcare-associated infection (HAI). The increasing number of infections due to *carbapenem-resistant Acinetobacter baumannii*, and the increasingly limited choice of antimicrobials due to the emergence of strains that are resistant to several antimicrobial classes, this study aims to determine differences in the value of MIC colistin, MIC meropenem between before and after the combination in vitro at Dr. Soetomo Hospital.

Method: This research is an experimental laboratories study with 19 samples of Carbapenem Resistant *Acinetobacter baumannii* isolates that have been identified from phoenix machines. The isolates were tested for susceptibility to colistin concentrations of 0.25 µg / ml, 0.5 µg / ml, 1 µg / ml, 2 µg / ml, 4 µg / ml, 8 µg / ml, 16 µg / ml and meropenem concentration, 1 µg / ml, 2 µg / ml, 4 µg / ml, 8 µg / ml, 16 µg / ml, 32 µg / ml, 64 µg / ml, 128 µg / ml, and its combination with the checkboard synergistic test method.

Result: Out of 19 CRAB isolates, four susceptible isolates against colistin and 15 isolates resistant to colistin. The combination of colistin and meropenem which produces the most MIC is at a concentration of 4 µg / ml colistin and 10 µg / ml meropenem of 10 isolates

Conclusion: There is a difference in impairment of MIC meropenem between before and after the combination. Whereas in colistin there was no difference in the decrease in MIC values between before and after the combination

Keywords: *Carbapenem-resistant Acinetobacter baumannii, Meropenem, Colistin, Checkboard Synergistic Test*