

## The synergism of colistin and meropenem killing against carbapenem resistant *Acinetobacter baumannii* : an in vitro experimental

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Carbapenem-resistant *Acinetobacter baumannii* (CRAB) 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. Aims to explore the synergistic effect of colistin and meropenem in killing against carbapenem resistant *Acinetobacter baumannii*. This research is an experimental laboratory 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  $\mu\text{g} / \text{ml}$ , 0.5  $\mu\text{g} / \text{ml}$ , 1

$\mu\text{g} / \text{ml}$ , 2  $\mu\text{g} / \text{ml}$ , 4  $\mu\text{g} / \text{ml}$ , 8  $\mu\text{g} / \text{ml}$ , 16  $\mu\text{g} / \text{ml}$  and meropenem concentration, 1  $\mu\text{g} / \text{ml}$ , 2  $\mu\text{g} / \text{ml}$ , 4  $\mu\text{g} / \text{ml}$ , 8  $\mu\text{g} / \text{ml}$ , 16  $\mu\text{g} / \text{ml}$ , 32  $\mu\text{g} / \text{ml}$ , 64  $\mu\text{g} / \text{ml}$ , 128  $\mu\text{g} / \text{ml}$ , and its combination with the checkerboard synergy test method. 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  $\mu\text{g} / \text{ml}$  colistin and 1  $\mu\text{g} / \text{ml}$  meropenem of 10 isolates. 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

### Biography:

Nurima Diah Puji Hastuti has completed his master at the age 35 years from Airlangga university. She is clinical microbiology at Saiful Anwar hospital.