

## ABSTRACT

### THE ACCURACY OF *CARB ACINETO NP* METHOD TO DETECT THE CARBAPENEMASE PRODUCING *ACINETOBACTER BAUMANNII* OF BLOOD FROM *ICU* PATIENT

*Acinetobacter baumannii* is one of the most emerging pathogens in the management of patient care, it can lead to infections, including bacteremia, pneumonia, meningitis, urinary tract infection and wound infection. The ability of this microorganisms to survive in various environmental conditions and to last for a long time on the surface make these microbes cause infectious disease outbreaks and increase in endemicity infectious diseases.

**Purpose:** This study was to determine the accuracy of *Carb Acineto NP* to detect the carbapenemase producing *Acinetobacter baumannii* using imipenem antimicrobial 6 g/ml with phenol red as an indicator. Based on the detection of colorimetric and pH changes to hydrolyze *-lactam* ring of imipenem .

**Method:** This research is descriptive. The purpose of this research is to test *Acinetobacter baumannii* isolates with *Carb Acineto NP* test. The isolates were stored that had been in compliance with the criteria of patient from *ICU*, *ROI*, *RPI*, and *NICU*. A total sample of 39 isolates, were examined, consisted of 27 isolates carbapenem resistant, and 12 isolates carbapenem sensitive, respectively based on susceptibility test Phoenix automatic machine.

**Result:** This positive results was found that the *Carb Acineto NP* test detected 35 of 39 (89.75%) changed color from red to yellow, after 2 hours incubation which was calculated from the the time of *in vitro* micro tube put in the incubator temperature of 37<sup>0</sup>C. Phenotypic screening test with *Modified Hodge* Test as the gold standart the same with *Hodge* Test obtained only 5 isolates formed *clover leaf*. Carbapenem-resistant isolates developed *Carb Acineto NP*, 24 isolates (88,9%) are yellow, 3 isolates (11,1%) are fixed red/orange. Using McNemar test with a confidence interval 95%, *Carb Acineto NP* test has a sensitivity 100%, specificity 11,8%, positive predictive value 14,3%, and negative predictive value 100%.

**Conclusion:** *Carb Acineto NP* method can detect carbapenemase producing *Acinetobacter baumannii* producing carbapenemase 35 isolates (89,75%). This metode is accurate, fast, to define carbapenemase producing *Acinetobacter baumannii*.

**Keyword:** *Acinetobacter baumannii*, *Carb Acineto NP*, *Intensive Care Unit*, *carbapenemase*