

ABSTRACT

Kurnia Febrina, NIM : 1534035, 2015. The different inhibition zone on the antibiotic sensitivity test of the aminoglycoside group (gentamicin and amikacin) using *Staphylococcus aureus* bacterium at the incubation temperature of 37°C. Bachelor Thesis, DIV Medical Laboratory Technology Study Program, Faculty of Medical Science, Universitas Katolik Musi Charitas.

Background: *Staphylococcus aureus* is a type of bacterium which can promote disease by making an invasion of human tissue. According to World Health Organisation (WHO), the optimum temperature to regrow the bacteria is 35°C. The higher temperature will increase the bacterium sensitivity. However, the sensitivity test is considered as an important way to see the sensitivity of *Staphylococcus aureus* bacterium against several antibiotics. Disc diffusion is one of the most common sensitivity tests of bacterium or microorganism. Currently, this study is conducted to investigate the different inhibition zone of *Staphylococcus aureus* bacterium using gentamicin and amikacin as the antibiotics models. The study is conducted at the incubation temperature of 37°C which is higher than the optimum temperature condition to regrow the bacteria based on WHO recommendation.

Method: This present study is analytical observation with a comparative cross-sectional study. The study is conducted at Microbiology Laboratory of Faculty of Medical Science, Universita Katolik Musi Charitas. The sample used in this study is *Staphylococcus aureus* which has been inoculated on *Mueller Hinton Agar* medium. To see the sensitivity of the bacterium, the small amount of gentamicin and amikacin antibiotics is added to the culture medium using *Kirby-Bauer* method. The medium is then incubated at 37°C for 24 hours. After 24 hours, the inhibition zone is measured in millimeter unit, and the obtained data is then statistically analyzed using Mann-Whitney test with a confidence level of 95%.

Result: From the result of the inhibition zone of gantamicin and amicacin antibiotic class aminoglycoside sensitivity tests showed the median inhibition zone obtained from the experiment is 23 mm with the minimum and maximum inhibition zone of 20 mm and 25 mm. Furthermore, statistical analysis found that there is no significant difference in the antibiotic inhibition zone of gentamicin and amikacin. It is based on the significant value which shows sig = 0,803.

Conclusion: there is no significant difference in the antibiotic inhibition zone of gentamicin and amikacin using *Staphylococcus aureus* bacterium which incubated at 37°C.

Keywords: Inhibition zone, sensitivity test, incubation, antibiotic gentamicin, antibiotic amikacin, *Staphylococcus aureus*.