ABSTRACT

Five Meilinnanda, NIM : 1534006, 2019. The different inhibition zone on the antibiotic sensitivity test of the Gentamicin antibiotic using *Staphylococcus aureus* in varying pH of culture medium Muller Hinton. Bachelor Thesis. DIV Medical Analysis Studi Program, Faculty of Medical Science Universitas Katolik Musi Charitas Palembang.

Background: The early detection of *Methicillin Resistant Staphylococcus aureus (MRSA*) in *Staphylococcus aureus* is considered as an important way to protect the antibiotic resistances in the patient. The antibiotics resistances can be seen by investigating the inhibition zone formed by the bacteria. *Kirby Baurer* method is one of the ways to see the inhibition zone. The culture media which mostly used is *Muller Hinton Agar (MHA)* with a specific pH ranging from pH 7,2 to 7,4 with a specific inoculation temperature at 37^{o}C. Several factors are well known affecting the diffusion sensitivity test result of *Kirby Baurer* and one of these factors is culture medium pH. This present result aims to investigate the different inhibition zone of gentamicin antibiotic using *Staphylococcus aureus* in varying pH (pH 7,0 , 7,3 and 7,6) in the culture medium of Muller Hinton.

Method: This research is a true experiment with the main sample is *Staphylococcus aureus*. The bacterial density is measured by seeing the bacterial turbidity and compare to *Mac Farland* 0,5 standard. The resistivity test uses Gentamicin as the antibiotic and conducted in *Muller Hinton Agar* culture medium. To investigate the effect of culture medium pH on the inhibition zone, the culture medium pH is adjusted to 7,0 , 7,3 and 7,6. After inoculation, the inhibition zone is measured and all the obtained data are analyzed using *Statistical Product and Service Solution* (SPSS) 22.00 with a specific Friedman test.

Results: In this study, there are 27 samples obtained with each approach has 9 samples. The result showed that the inhibition zone at pH 7,0, 7,3, and 7,6 are 22,7 mm, 24,3 mm and 26,4 mm, respectively. The result of Friedman test also supports that there is a difference of inhibition zone of *Staphylococcus aureus* inoculated at Muller Hinton Agar media, indicating the antibiotic sensitivity of *Staphylococcus aureus* using gentamicin antibiotics is affected by the pH of culture medium.

Conclusion: The result showed that there is a different of antibiotic sensitivity in *Staphylococcus aureus* at the difference pH of Muller Hinton Agar media.

Keywords: Inhibition zone, *Staphylococcus aureus*, Gentamicin, pH variation, Muller Hinton.