

ABSTRACT***In Vitro* Comparison of Doubling Time between Multiresistant and Non-multiresistant Strain of Methicillin Resistant *Staphylococcus aureus* (MRSA) of Malang City's Patient's Isolates**

Background : One of the virulence factor of bacteria is the colonization which depend on the growth rate. Multiresistant bacteria was believed to have a slower growth rate than non-multiresistant bacteria.

Aim : To investigate whether there was differences in doubling time of multiresistant and non-multiresistant strain of MRSA.

Method : We obtained susceptibility profile to eight classes of antibiotics. The calculation of doubling time was performed as an overnight of bacterial cultures were diluted 1 : 100 in 5 mL of BHI medium and grown for 3 hours at 37°C, 180 rpm. These cultures were seeded at a 1:100 dilution in another 5 mL BHI medium and incubated at 37°C, 180 rpm for further 4 hours. Optical density was measured every 30 until 4 hours. Values were converted into log₂ values, and the doubling time was calculated as the reciprocal of the slope.

Results : The mean of doubling time of multiresistant strain of MRSA was 27.9 ± 5.80 minutes, whereas non-multiresistant strain of MRSA was 22.3 ± 0.99 minutes (p<0.05). In addition, the logarithmic phase was different significantly between groups (p<0.05). There was a correlation between the duration of logarithmic phase and doubling time (p<0.05).

Conclusion : The doubling time of multiresistant strain of MRSA was significantly longer than the doubling time of non-multiresistant strain of MRSA.

Keywords : *multiresistant, non-multiresistant, MRSA, doubling time.*