

ABSTRACT**PATTERN OF BIOFILM-FORMING PAIR ORGANISMS AND THEIR ANTIMICROBIAL SUSCEPTIBILITY TEST OF PATIENTS IN INTENSIVE-CARE UNITS IN RSUD DR.SOETOMO SURABAYA****Dewi Klarita Furtuna**

Biofilm-associated microorganisms can cause disease by attachment of individual or group cells on the surface of medical device and have chance to grow as organisms that are resistant to antibiotics. These microorganisms can be prokaryote or eukaryote organisms that can exist in one of two forms, i. e., sessile or planktonic. Treatment of device-associated infection with systemic antimicrobial agent usually ineffective. Biofilm-forming organisms on medical devices can be Gram-positive bacteria, Gram-negative bacteria, or yeasts. By knowing the presence of biofilm on medical devices, one can avoid quorum sensing which leads to treatment failure due to antibiotic resistance.

Purpose: To pattern the biofilm-forming organisms and their antimicrobial susceptibility test from medical devices on patients so that therapeutic management of patients with biofilms can be more accurate by giving antibiotic according to the species identified and the antimicrobial susceptibility test.

Method: From 86 specimens that were analyzed, only 36 specimens that showed organism growth and ability to form biofilm in Microtiter Plate Assay. From 36 isolates that were analyzed for the ability to form biofilm, only 31 isolates that can be planktonic and sessile, which then identified and tested for antimicrobial susceptibility because the density produced were more or equal to 0,4 (cut off 0,4).

Result: From the organisms obtained from devices by Microtiter Plate Assay, the distribution and antimicrobial susceptibility pattern were made based on planktonic and sessile form of biofilm. Planktonic *Escherichia coli* from urinary and intravenous catheters matched 100% with the sessile form on the devices, as well as *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Gram-positive cocci found was *Staphylococcus aureus*. Planktonic *Staphylococcus aureus* from urinary and intravenous catheters matched 100% with the sessile form on the devices. The emphasize was that sterile form on planktonic biofilm does not always means that the sessile form was also sterile.

Conclusion: Microtiter Plate assay method can be used to pattern pattern the biofilm-forming organisms and their antimicrobial susceptibility test based on the planktonic and sessile forms of biofilm, therefore helping clinicians in deciding the right antibiotic treatment.

Keywords : *pattern, antibiotic, susceptibility, planktonic-sessile*