

Antibiotic resistance of biofilm-producing bacteria from sepsis patients in Prof. Dr. Margono Soekarjo Hospital, Purwokerto, Central Java

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Abstract	<p>Sepsis is a life-threatening organ dysfunction induced by the body's response to infection and is a significant cause of critical illness and death in hospitals. Bacteria are the most common pathogens that cause sepsis, and their ability to form biofilms increases their resistance to antibiotics. As a result of the failure of antibiotic administration therapy, the severity and pain of sepsis worsen. The study used a descriptive research design to determine the antibiotic resistance pattern of biofilm-producing bacteria from clinical isolates of sepsis patients. Using the BacT/Blood Culture System Alert, all patients suspected of sepsis in the intensive care unit of Prof. Dr. Margono Soekarjo General Hospital Purwokerto were examined for blood cultures between March and July 2018. These were then identified and tested for antibiotic resistance with the Vitek 2 Compact. Biofilm formation was detected utilizing the microtiter plate assay method, and the data were analyzed using a frequency distribution table. The results obtained 12 bacterial isolates, with <i>Escherichia coli</i> (41.67%), <i>Staphylococcus haemolyticus</i> (33.33%), <i>Klebsiella pneumoniae</i> ssp <i>pneumoniae</i>, <i>Enterobacter cloacae</i> complex, and <i>Acinetobacter baumannii</i> complex (8.33%) as the most common bacteria. All gram-negative bacteria (more than 80%) were resistant to ampicillin, cefoxitin, ceftazidime, ceftriaxone, aztreonam, and trimethoprim but were sensitive to meropenem (100%). Gram-positive bacteria were resistant to cefoxitin, benzylpenicillin, oxacillin, ciprofloxacin, erythromycin, and clindamycin (100% each). However, they were sensitive to tigecycline, nitrofurantoin, quinupristin, linezolid, vancomycin, and tetracycline (100% each). Gram-negative bacteria formed 50% biofilms, and 50% did not, whereas gram-positive bacteria produced 100% biofilms. In conclusion, bacteria clinical isolates of septic patients from Prof. Dr. Margono Soekarjo General Hospital Purwokerto are multiresistant to more than six types of antibiotics and produce weak to moderate biofilms, which can promote antibiotic resistance.</p>
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