ABSTRACT

SUSCEPTIBILITY PATTERN OF METHICillin-RESISTANT
STAPHYLOCOCCUS AUREUS (MRSA) BACTERIA
IN DR. SOETOMO GENERAL ACADEMIC HOSPITAL SURABAYA,
INDONESIA

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Introduction: MRSA is one of the major Gram positive bacteria causing infection in human and nosocomial infection. Since the first time MRSA identified in 1961, the prevalence of MRSA has increased worldwide. This indicates the possibility of increasing MRSA prevalence in Indonesia. Nowadays the data of MRSA in Indonesia is limited. This study aims to explore the prevalence and susceptibility pattern of MRSA in Dr. Soetomo General Academic Hospital Surabaya, Indonesia.

Methods: This study was a descriptive-analytical cross-sectional study. The samples were all clinical isolates of Staphylococcus aureus and MRSA from January to December 2017 that were identified in Laboratory of Clinical Microbiology, Dr. Soetomo General Academic Hospital, Surabaya. Duplicate clinical isolates and colonized MRSA were excluded from this study. Data obtained were analyzed using SPSS Statistics.
Results: A total of 659 *Staphylococcus aureus* isolates were identified, of which, 180 (27.3%) were MRSA. Majority of 106 (58.9%) MRSA isolates were from pus and swab. MRSA were more frequently originated from medical ward (n=56/180; 32.2%). MRSA were highly sensitive to daptomycin (n=144/144; 100.0%), linezolid (n=174/178; 97.8%), vancomycin (n=172/179; 95.0%), nitrofurantoin (n=56/59; 94.9%), quinupristin-dalfopristin (n=164/175; 93.7%), moxifloxacin (n=147/164; 89.7%) dan fosfomycin (n=116/134; 86.6%). The susceptibility of the other antibiotics such as rifampicin (n=128/169; 75.7%), clindamycin (n=112/168; 66.7%), erythromycin (n=112/168; 66.7%), chloramphenicol (n=78/69; 45.1%), cotrimoxazole (n=45/176; 25.6%), tetracycline (n=21/176; 20.6%), levofloxacin (n=35/179; 19.6%), and gentamicin (n=28/179; 15.6%) were less than 80%.

Conclusions: The prevalence of MRSA in Dr. Soetomo General Academic Hospital Surabaya, Indonesia, is 27.3% (n=180/659). The prevalence tends to decrease from January to December 2017. Majority of MRSA were sensitive to daptomycin, linezolid, vancomycin, nitrofurantoin, quinopristin-dalfopristin, moxifloxacin, and fosfomycin. MRSA less susceptible against rifampicin, clindamycin, erythromycin, cloramphenicol, cotrimoxazole, tetracycline, levofloxacin, and gentamicin.

Keywords: Methicillin-resistant *Staphylococcus aureus*, MRSA, susceptibility pattern, prevalence, Indonesia