SUSCEPTIBILITY PATTERNS AND SCCmec TYPES OF METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) ISOLATES FROM SKIN AND SOFT TISSUE INFECTION (SSTI) PATIENTS

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INTRODUCTION

Methicillin resistant Staphylococcus aureus (MRSA) is a major infection problem both in hospital and community setting due to resistance to antimicrobials. The mechanism of resistance based on mecA gene-part of Staphylococcal cassette chromosome mec (SCCmec)\(^1\). Now about 8 type of SCCmec were identified. The origin of SCCmec type were type I for multiresistant phenotype and type IV for nonmultiresistant phenotype\(^2\). Type II and type III were originated from type I SCCmec, while others types were originated from type IV SCCmec\(^3\). Skin and soft tissue infection was commonly found in community setting but now many patients especially with immunocompromissed condition also often appearing these infections\(^4\). Exploring of genotype and phenotype of MRSA were important to assist diagnosis, treatment and prevention of infection\(^5\).
METODE
The design of study was observational explorative with laboratory approach to identify susceptibility patterns and SCC
type of MRSA isolated from SSTI patients from Moh. Hoesin General Hospital Palembang. Antimicrobial Susceptibility Testing (AST) was diffusion method. PCR multiplex to identify the SCC
c according to Zhang et al (2005) with modification⁶.

RESULT AND DISCUSSION

Staphylococcus aureus were 33 (71,7%) causing agent of 46 SSTI patients, another 28,3% of these infection were caused by Acinetobacter calcoaceticus, Klebsiella pneumoniae and Escherichia coli. PCR result to determine mecA gene were found in 22 samples (46,8%). This prevalence is high category. MRSA prevalence in the world were among 2 – 70%. The lowest prevalence was in Netherland due to successful of MRSA controlling program⁷. Multiplex PCR with modification results 15 isolates of MRSA have SCCmec type III and 1 isolate has SCCmec type I, unfortunately 6 isolates were not identified. Type III SCCmec was commonly found in hospital setting. It was very interesting because type I SCCmec found in our hospital. Type I is a classic type indicated originally of MRSA was from this area not import from another area⁸. Another 6 samples MRSA which unidentified of SCCmec could be cause unmatched of PCR primers⁹. Based on antimicrobial resistance testing diffusion method, we found 13 samples with SCCmec type III were multiresistant, 2 samples were not multiresistant. MRSA with SCCmec tipe I was multiresistant phenotype. Two of
these resistant group (SCC mec type I – III) were nonmultiresistant. It was indicated any change in susceptibility pattern in biochemical level but not in genetical level yet\(^\text{10}\). There were no type IV of SCC mec because the patients were immunocompromissed group such as diabetic complication. Commonly inpatients in hospital has SCC mec type III.

Picture 1. PCR result of SCC mec type III amplicon 280 bp. M is marker. K negative control.

Gambar 3. PCR result of SCC mec type I amplicon 600 bp. M is marker.

**CONCLUSION**

MRSA with SCC mec type III was a significant agent of SSTI in our hospital and there were initial indicated any change in susceptibility patterns of MRSA.
REFERENCES


