Distribution of Staphylococcal Cassette Chromosome mec (SCCmec) among Methicillin-Resistant Coagulase-Negative Staphylococci (MR-CoNS)

*Huda S1, Azmiza J1, Jamaluddin TZMT1, Lailatul Akmar MN2, Rosni I1

1Department of Medical Microbiology and Parasitology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, 43400 Serdang, Selangor  
2Department of Pathology, Hospital Serdang, Selangor

Abstract

Methicillin-resistant coagulase-negative staphylococci (MR-CoNS) are notorious in causing nosocomial infections. They harbour the mecA gene which confers methicillin resistance and is commonly acquired by a mobile genetic element called staphylococcal cassette chromosome mec (SCCmec). In Malaysia, there is data scarcity on SCCmec in MR-CoNS. Thus, this study is aimed to determine the species distribution and SCCmec types among MR-CoNS. Coagulase-negative staphylococci (CoNS) isolated from blood cultures were collected from the Microbiology laboratory, Hospital Serdang in year 2016 and subjected to phenotypic identification (Gram-staining, catalase and coagulase tests). Species identification was done using the API® Staph kit. The detection of SCCmec was performed via multiplex PCR. *Staphylococcus epidermidis* was the most common species isolated (n=56, 56%) followed by *Staphylococcus haemolyticus* (n=19, 19%), *Staphylococcus chromogenes* (n=12, 12%) and four more species. All 100 isolates were found resistant to cefoxitin and penicillin. A total of 54 (54%) isolates harboured SCCmec type IVa (n=32, 32%) which was widely distributed in *S. epidermidis* (n=27, 48.2%). Fifteen (15%) isolates showed combination types in which the most common was type I and IVa (n=9, 9%) while 31 strains (31%) were non-typeable. In conclusion, *S. epidermidis* was the most common species isolated in which SCCmec type IVa was predominantly detected. Nevertheless, type I and IVa were also found as the most detected combination type.

**Keywords:** mecA, MR-CoNS, SCCmec, species distribution

*Authors for Correspondence*