侵襲性葡萄球菌菌株對抗生素敏感性與基因型分析

顏佑珊、劉淑瑛、邱政洵

E-mail: 374865@mail.dyu.edu.tw

摘 要

背景： 金黃色葡萄球菌 (Staphylococcus aureus)是臨床上一個重要的致病微生物，它可以引起各種不同的感染症。本研究目的是分析從侵襲性感染的病人分離之methicillin抗藥性金黃色葡萄球菌(methicillin-resistant S.aureus, MRSA)、methicillin敏感金黃色葡萄球菌 (methicillin-sensitive S.aureus, MSSA)及凝固?陰性葡萄球菌 (Coagulase-Negative Staphylococcus, CoNS)對抗生素感受性及其基因型別之分析。 方法: 收集林口長庚紀念醫院2010年從血液中所分離的198株MRSA、51株MSSA及48株CoNS臨床菌株，用E-test測試其最小抑制濃度 (minimum inhibitory concentration, MIC) 並使用聚合酵素鏈鎖反應來分析Staphylococcal cassette chromosome mec (SCCmec) 型別、Panton – Valentine leukocidin (PVL) 基因以及Multilocus sequencing typing (MLST)基因型別。 結果: 所有MRSA菌株對vancomycin、teicoplanin、linezolid及daptomycin四種抗生素的MICs範圍是0.75-6、0.38-12、0.5-3及0.094-2μg/L，另外15株hVISA分別是2-6、2-6、1-1.5及0.5-1.5μg/L。MSSA及CoNS對vancomycin、daptomycin兩種抗生素的MICs範圍是1-1.5、0.125-0.5以及0.75-3、0.125-2μg/L。MRSA菌株的SCCmec分型檢測得知第I、II、III 型共114株，第IV、V型測得84株。研究指出SCCmec第I、II、III 型常見於hospital-acquired MRSA (HA-MRSA)而第IV、V型則常見於community-associated MRSA (CA-MRSA)，在台灣HA-MRSA以SCCmec第III型為主，CA-MRSA則以SCCmec第IV型為主。在CA-MRSA中測得24株帶有PVL基因(8.78%)之菌株。MRSA菌株的MLST基因型別主要以ST239 (HA-MRSA)及ST59型(CA-MRSA)為主。MRSA菌株使用MLST分型為ST45的菌株對ciprofloxacin有完全抗藥之現象但在ST59則全為敏感，且SCCmec分型與PVL基因對此抗生素的抗藥。 結論: HA-MRSA的抗藥性強度比CA-MRSA來得高，且不帶有PVL基因之MRSA抗藥性較帶有PVL基因之菌株來的高。Daptomycin對S.aureus有較好的的抑制作用。台灣的ST45型MRSA也對ciprofloxacin具有完全抗藥。CA-MRSA的致病率卻比HA-MRSA來得高，我們發現CA-MRSA菌株感染有日漸嚴重，因此CA-MRSA的防治是一個值得關注之議題。參考前人研究發現S.aureus 對臨床常用之抗生素的抗藥性有逐漸增強，因此未來抗生素的使用及管理是重要的。

關鍵詞 : MRSA、MSSA、CoNS、SCCmec、PVL、MLST、MIC、vancomycin、teicoplanin、linezolid、daptomycin、ST45

目錄

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