中文題目：2011至2018年中部某醫學中心自無菌部位分離的515株金黃色葡萄球菌基因分型與第二代氟喹酮抗生素敏感率和白血球毒殺素分布的相關性

英文題目：Correlation of genotyping results with moxifloxacin susceptibility and Panton-Valentine leukocidin among 515 invasive *Staphylococcus aureus* isolates, 2011-2018

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Background: *Staphylococcus aureus*, especially methicillin-resistant *S. aureus* (MRSA), is a leading pathogen causing invasive infections with remarkable morbidity. Genotyping using the genome named staphylococcal chromosome cassette *mec* (SCC*mec*) has been widely used for typing healthcare-associated (HA-MRSA) and community-associated MRSA (CA-MRSA) isolates. The goal of this study was to delineate the molecular typing results of invasive *S. aureus* isolates and to correlate these with moxifloxacin susceptibility and Panton-Valentine leukocidin (PVL).

Methods: Non-duplicate *S. aureus* isolates from patients with invasive infections were collected from a 1,130 bed-affiliated medical center in central Taiwan during the 8-year period (2011-2018). Polymerase chain reactioin (PCR) was used for detection of *mecA* gene and gene encoding PVL (*pvl*). The SCC*mec* types was determined using multiplex PCR. The minimal inhibitory concentration (MIC) of *S. aureus* against moxifloxacin was determined by agar dilution test, and . The correlations of SCC*mec* types with moxifloxacin susceptibility and PVL were analyzed.

Results: Totally 515 invasive *S. aureus* isolates, including 223 MSSA and 292 *mecA*+MRSA were collected, and most were isolated from blood (447, 86.8%), followed by bronchoalveolar lavage (BAL) (25, 4.8%), pleural effusion (15, 2.9%), 10 isolates (1.9%) for ascites and synovial fluid, and cerebrospinal fluid (CSF) (8, 1.6%). MRSA isolates harboring SCC*mec* I (3, 1.0%), II (32, 11.0%), and III (56, 19.2%) were classified as HA-MRSA, while those with SCC*mec* IV (104, 35.6%), V (34, 11.6%), and V_T (32, 11.0%) were classified as CA-MRSA (170, 58.2%). The susceptibility rate of 515 *S. aureus* solates to moxifloxacin was 69.1%, which was significantly higher in MSSA (97.3%) than MRSA (47.6%) ($p < 001$), and in CA-MRSA (61.2%) than HA-MRSA (6.6%) ($p < 001$). There were 84 (16.3%) *S. aureus* isolates harboring PVL, and most in MRSA (80, 27.3%) than MSSA (3, 1.3%) ($p < 0.001$), and in CA-MRSA (81, 47.6%) than HA-MRSA (0, 0%) ($p < 001$).

Conclusion: According to the susceptibility results, moxifloxacin is the appropriate antibiotic regimen for treatment of invasive MSSA and CA-MRSA infections. PVL, which is associated with skin and soft tissue infections and necrotizing pneumonia, is frequent detected in MRSA, especially CA-MRSA.