

CHAPTER VII

CONCLUSION

In this study it could be concluded that the burn unit was the major source of MRSA in Siriraj hospital. The prevalence of MRSA in this unit was high (53.33%) when compared with the TICU (27.27%) at the same hospital. The route of transmission of MRSA could not be completely concluded. However, there was a low prevalence of MRSA in nasal cavities of medical staffs in the burn unit, MRSA might be transiently colonized on their hands as well as on medical equipment in the unit and the transmission of MRSA from one patient to another should be via direct contact to such sources. The low rate of MRSA in nares of these medical staffs might be explained by the fact that they were strictly to the precaution according to the presence of MRSA in the ward.

Pulsed-field Gel Electrophoresis (PFGE) was used for the molecular typing of the strains and could distinguished all the 142 MRSA isolates into 5 pulsotypes; A, B, C, D, and E. Most of the MRSA isolates in this study were pulsotype B and its subtype (B1, B2, B3, B4, B5, and B6). It could possibly suggest that MRSA pulsotype B is the epidemic (outbreak strain) in Siriraj Hospital because the isolates from ICU trauma unit shared the same pulsotype (type B).

From the results of antimicrobial susceptibility test, it was shown that vancomycin and teicoplanin were still the most effective agents against MRSA infection, because all isolates (100%) were susceptible to these agents. In addition, fosfomycin, chloramphenicol, clindamycin, and netilmicin were shown to be useful in the treatment of MRSA infection, because of the high percentage of the susceptible strains ($\geq 75\%$).

Cephalosporins were the most frequently administered to the burn patients, but the MRSA isolates in this study were very resistant to these agents because all isolates

could produced beta-lactamase which destroy beta-lactam antibiotics. Another beta-lactam antibiotics such as ceftriazone were also used in this unit. It was also found that most of the patients who received these agents for at least 3 days were infected with MRSA while most of the MRSA-negative were not received these agents. Thus, beta-lactam antibiotics were not appropriate to be administered to the MRSA infected patients, and these agents could possibly lead to the occurrence of MRSA.



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