

CHAPTER 6

CONCLUSION.

The prevalence of penicillin- and erythromycin-susceptible *Streptococcus pneumoniae* in Southern Thailand was 43.5% and 56.5%, respectively. These figures showed that susceptibility of penicillin and erythromycin were decreased from the past. Besides inappropriate use of antibiotics to treat viral respiratory tract infection, easy obtaining antibiotics without prescription in Thailand may be one cause that created elevating of percentage of penicillin- and erythromycin-nonsusceptible pneumococci. Susceptibility to imipenem was quite equal to previous prevalence. Additionally, all of pneumococcal isolates are susceptible to levofloxacin. Furthermore, susceptibility pattern of *S. pneumoniae* isolated from patients with meningitis to third generation cephalosporin, cefotaxime was 100 % susceptible, thus pneumococci remained susceptible to cefotaxime or ceftriaxone. However, this prevalence was from the limited number of patients with meningitis therefore empiric antibiotic therapy should be also based on patients clinical presentation on admission. Moreover, pneumococci isolated from patients with pneumonia were penicillin-nonsusceptible strains more than penicillin-susceptible strains ($P=0.007$) due to the most clinical specimen for organism culture in our study were sputum.

The major risk factor for acquisition of drug-resistant pneumococci in this study was co-morbidity; odds ratio was 3.5 (95%CI, 1.1-11.5) for infections with penicillin resistance and was 4.0 (95% CI, 1.2-13.1) for infection with erythromycin resistance. Furthermore, patient age also was the risk factor of penicillin- and erythromycin-resistant pneumococci infected in adults.

Despite a favorable response within 72 hours and length of stay between patients who infected with drug-susceptible isolates were different from those patient with drug-resistant pneumococcal strains, the differences were not statistically significant. In addition, there was no difference in length of stay, admission to ICU, favorable response with in 3 days and 7 days, final clinical outcome and death between patients who had infected with susceptible pneumococci and those with nonsusceptible pneumococci.

Even though we found antibiotic treatment failure among patients with penicillin-susceptible and intermediately susceptible pneumococci who received standard β -lactam antibiotic for treatment pneumonia and bacteremia, susceptibility to penicillin of pneumococcal isolate was not related to final clinical outcome of standard β -lactam therapy. Therefore, it may be deduced that penicillin or ampicillin remained appropriate drug of choice for pneumonia and bacteremia caused by susceptible- and intermediately susceptible penumococci. For serious infection such as meningitis, non-pseudomonal third generation cephalosporins are the effective drug against penumococci. Importantly, besides microbiological susceptibility testing report, antibiotic use should be based on patient clinical status.