

CHAPTER VI

CONCLUSIONS

This study showed that the initial screen test recommended by NCCLS could provide the most correlation with the result from phenotypic confirmatory test (NCCLS) when the positive result from all three drugs; ceftazidime, cefotaxime, and ceftriaxone were used instead of screening by either one or two out of the three drugs. The E - test ESBL screen test has been shown to be less sensitive in the detection of ESBL producing *K. pneumoniae* than the phenotypic confirmatory test. Thus, the ESBL enzyme detection should provide the confirmation on the efficacy of all these methods.

There were 100 ESBL producing *K. pneumoniae* among 436 isolates when using the NCCLS phenotypic confirmatory test. All of the isolates were isolated from clinical specimens particular from urine and sputum. None of the 36 *K. pneumoniae* isolates obtained from 100 normal persons were ESBL producing isolates. The antimicrobial susceptibility test of the 100 ESBL producing isolates showed interesting result of the types of ESBL produced from *K. pneumoniae*. According to the MICs, it was suggestive that 32 isolates produced "Broad" activity ESBL type, 13 isolates produced "ceftazidimase" activity and 55 isolates undetermined ESBL type.

Therefore, further study on the enzymes' characteristics should be performed before more definite conclusions could be made.

From the MICs values of the ESBL producing isolates, only 5% were susceptible to ceftazidime, 87% to cefotaxime, 79% to ceftriaxone, 30% to cefuroxime, 90% to ceftazidime and all isolates were susceptible to imipenem while the results from the Kirby - Bauer paper - disk test, showed that 50% of the isolates were susceptible to gentamicin, 71% to amikacin, 16 % to tobramycin, 67% to ciprofloxacin and 38% to trimethoprim - sulfamethoxazole.

No endemic or epidemic strain of ESBL producing *K. pneumoniae* was found from the molecular typing by PFGE technique. There were as many as 86 pulsotypes found among all 100 isolates. In order to make a conclusive evidence on the epidemiology of *K. pneumoniae* more precise study on the detection of *K. pneumoniae* in the specific patient unit during the certain period should be performed. However, the result from this study indicated the possibility that there were numerous pulsotypes of *K. pneumoniae* throughout Siriraj Hospital.