



## CHAPTER V

### CONCLUSION

The results obtained from this study were concluded as follow :

1. Physician in General Police Hospital usually do not apply pharmacokinetic to the gentamicin dosage regimen calculation and gentamicin was given according to the physicians' traditional dosage regimen, the majority of patients will have subtherapeutic trough concentrations (results from 3A-3E). Patients with impaired renal function required a more careful consideration on the suitable dosage regimen administration because these patients showed higher tendency to gain toxicity or non-effective treatment than the normal patients (see table 3E)

2. The results obtained from table 5A-5D indicated that when the adjustment of the dosage regimen was required, patients who initially received gentamicin by IV infusion method will give a better prediction than patients who initially received gentamicin by IM or IV push.

3. The results obtained from table 6A-6C and figure 1A-1C indicated that when gentamicin was administered with the pharmacokinetic calculated dosage

regimen higher percentage of patient whose serum gentamicin concentrations were within therapeutic range will be obtained as compared to those results obtained when the drug was administered with traditional dosage regimen. The percentage of improvement was much higher if the drug was initially given by IV infusion method.

4. The results obtained from comparison among different method used for predicting serum gentamicins indicated that the criteria of using equation to calculated predicted serum gentamicin concentrations or suitable dosage regimen was as follow :

4.1 If serum gentamicin concentrations could not be obtained the elimination rate constant should be estimated from equation generated from Thai population while the volume of distribution used was the population's mean value.

4.2 When serum gentamicin concentrations could be obtained, both the elimination rate constant and volume of distribution should be estimated from at least two serum drug concentrations. If volume of distribution couldn't be estimated then the population's mean value should be used.

4.3 The elimination rate constant estimated from equation generated from foreign population gave the least accurate result.