CHAPTER 7

CONCLUSION

7.1 Result

In conclusion, 102 CAPD patients were included in the analysis. The mean age was 57.3 years. Forty cases (39.2%).were diabetic. Peritonitis occurred 157 episodes in 72 cases (70.6%) , with the mean rate of 1.54 episodes per year per person. The range of peritonitis varied from 0 to 9 episodes per case. The average of time to first peritonitis episode was 283 days .

Only 18.5% of all episodes of peritonitis were culture positive. Pseudomonas species was found to be the most common cause of peritonitis (7 episodes, 4.5%). The incidence of peritonitis from coagulase negative Staphylococcus were the same as Klebsiella sp. (6 episodes, 3.8%). Peritonitis from S. aureus was less common (2episodes, 1.3%).

Catheter infection occurred 47 episodes in 29 cases (28.4%) , with the average rate of 0.46 episodes per year per person. The range of infection varied from 0 to 5 episodes per case. S. aureus and coagulase negative staphylococcus were common organisms in catheter infection . Twenty four episodes (51.1%) of catheter infection caused by S. aureus. Infection was the most common cause of removal the catheter. The mean survival of the catheter was 1430 days (SE=88). The other common causes of catheter removal were changing to hemodialysis, or kidney transplantation.

Overall mortality was 26.5 %(27 cases). Death from peritonitis was 7.8% (8 cases), and form other causes 16.7% (17 cases). By Logistic Regression +

Analysis (table 5.14), BUN level, duration, and education are found to be the risk of peritonitis .

In cased who developed peritonitis, by Multiple regression analysis, BUN level, Hb level and duration are found associated with time to first episode of peritonitis. The effect of BUN in reducing the risk, or prolonging time to first episode of peritonitis, can be explained by many hypothesis. The first, there might be the difference in treatment between high BUN patients and the remainder. The high BUN patients might perform their dialysis more carefully, because they knew that their blood chemistries were not good. In addition, in high BUN group, the patients might feel discomfort, so they visited the hospital more frequently, or received some more treatment that affected the peritonitis . The second , there may be some difference in peritoneal dialysate in high BUN patients. The BUN level , calcium level or other chemistries, in peritoneal dialysate in this group, may be higher or lower than the remainder, and affect the growth of bacteria or the peritoneal macrophages. The adequacy of dialysis, the detail in treatment , the chemistry of peritoneal dialysate, and the function of macrophages, should be investigated in further cohort study.

Although duration is found to be the risk by Logistic Regression Analysis, it is still not significant in clinic, because the duration is not the survival.

High education is the factor that more strong to reduce the risk of peritonitis. High educated patients may change the dialysate more carefully and may also visit the physicians more earlier when there are the problems in dialysis. The well trained procedure, and the repeated training programs at the appropriate time, in low education group, should improve the outcome.

The average rate of peritonitis in aging, diabetic, and S. aureus infected patients are non statistically significant higher than the remainder. The survival of

the patients are statistically shorter in diabetic group. The majority of causes of death come from other causes, not from infection. The survival of S. aureus infected patients, is non statistically different than non infected patients. But the survival is better than other infection. This finding can be explained by the nature of this organism, which is easy to get rid by the antibiotics. There is no difference in survival and technique survival between aging and middle age group.

7.2 Benefit and Planning For Further Study

This study gives more details about the peritonitis in Thai CAPD patients. Low BUN level, duration, and low education are found to be the risk of peritonitis . Low education, may relate to the failure to practice aseptic techniques, and the poor personal and accommodation hygiene, and increases the risk of peritonitis. The well trained procedure and the repeated training programs at the appropriate time in low educated patients should improve the outcome .

The attempt to get rid S. aureus infection by detection the nasal carrier may be not necessary because, the peritonitis from S. aureus is less common. Besides, the survival of S. aureus infected patients is not different from no infected cases. Aging , DM, and S. aureus infection does not affect the risk of peritonitis and the technique survival. Aging does not effect the mean survival, so the policy in limiting CAPD by age, should be canceled. However diabetic patients have shorter survival rate than the remainder. The majority in theses patients are from the other causes, such as coronary heart disease , or cerebrovascular system. The attempt to prevent these diseases will give benefit to the patients.

The finding that high BUN level prolongs the time to first episodes of peritonitis, and reduces the risk of peritonitis is very surprising. The further cohort study, about the adequacy of dialysis, the detail in treatment , and the chemistry of

peritoneal dialysate, and the function of macrophages, should be performed. For the next study, factors that high correlated to the peritonitis should be included in the analysis. They are age, BUN , education, type of bags and system , causes, DM, the presence of both Staphylococcus aureus, and Staphylococcus epidermidis infection.

Hb level is found associated to time to first peritonitis episode. High Hb level prolongs the time to first peritonitis. The next study about erythropoietin which can treat anemia should be performed in prospective analysis. If erythropoietin treatment can prolong peritonitis or reduce the risk , the effectiveness, the efficacy and the cost-benefit should be analyzed.
