

CHAPTER I

INTRODUCTION

Incidence of Tuberculosis and Associated Factors among HIV-infected Persons Registered for Isoniazid Preventive Therapy in Chiang Rai, Thailand

In Thailand, HIV infected people have been estimated nearly one million since the beginning of the epidemic and adult HIV prevalence is over 2 %. HIV infection is a potent risk factor for reactivation of TB infection and TB is the most frequent opportunistic infection in HIV infected people. Northern Thailand is a high HIV epidemic area and HIV seroprevalence in TB is 20- 40 %. Chiang Rai is the northernmost province of Thailand and HIV prevalence in TB patients in Chiang Rai provincial hospital was reported 42 % in 1999. To prevent the development of active TB, nearly half of the hospitals in upper northern Thailand reported to provide 9-month Isoniazid Preventive Therapy (IPT) for TB/HIV co-infected persons in 1999.

Active TB protective effect of IPT was reported about 80 %. But there are some problems related to IPT. The first, inappropriate medical evaluation before registering IPT is related to the high incidence of active TB among IPT participants. The second,

the long-term efficacy of IPT is not clear. The third, the incidence of active TB depends on the TB diagnostic method, but the guideline of TB diagnostic method, especially extrapulmonary TB is inadequate for precise TB diagnosis. The fourth, there is a lack of understanding of the factor related to development of active TB. To address these problems, an essay, a proposal and a data exercise were written as a major content in this thesis.

The essay part is Chapter II, which gathers the related information such as TB and HIV epidemiology, TB diagnostic method among HIV infected persons and IPT. Chapter II provides an overview of the situation of TB and HIV co-infection and IPT to understand the problems.

Chapter III is the proposal. Based on the information gathered in Chapter II, two major research questions related to the IPT for HIV infected persons were addressed. The first question is what is the incidence rate of active TB among HIV infected persons registered or completed for 9-month IPT. The second question is what are the factors affecting the development of active TB. To answer these questions, a prospective cohort study in Chiang Rai province is designed. Sample size is 1300. Participants will be prescribed 9-month IPT and followed up for 3 years to determine the incidence of active TB and associated factors. The face-to-face interview, physical examination, laboratory and radiographic examination will be used for data collecting method. The implication of this research is to develop the optimal IPT guideline of active TB diagnostic method for HIV infected persons through providing the information about the incidence of active TB and associated factors among HIV infected persons prescribed IPT.

Chapter IV is data exercise, which was performed in six hospitals in Chiang Rai.

There are three study objectives. The first objective is to review the availability of data that will be used for prospective study. The second objective is to investigate the data collecting process for analyzing data quality. The third objective is to investigate the characteristics of active TB cases among HIV infected persons registered for IPT. The main findings of data exercise were that many data required for prospective study couldn't be available on routine basis. Another finding is that, many HIV infected persons developed TB during 9-month IPT and this might reflect inappropriate TB screening. The final finding is that, sputum smear couldn't detect nearly half of active TB. These information was applied for improving the data collecting techniques and TB diagnostic method in prospective study. To improve the process of data collection, five data collecting forms were made (Appendix I-V) and to improve TB diagnostic method, sputum smears, bacterial culture and chest X-ray were selected for appropriate active TB diagnostic method for prospective study.

Chapter V is the presentation part, which proposed to the committee during thesis examination. This chapter consists of transparencies of information and recommendation.

Chapter VI is the annotated bibliography, provides a brief overview of major books or journals used for counseling and writing this study.