CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Discussion

I found that unsuccessful TB treatment outcome for HIV-infected patients is high in An Giang Province; this finding may be generalizable to the other provinces of Vietnam which are impacted heavily from the both TB and HIV epidemic. The high mortality rate for HIV-infected TB patients in An Giang is consistent with data from other developing countries (Rustomje et al., 2004; Romo-Garcia et al., 2004). I also found that poor TB treatment (Rx) outcomes were associated with adverse drug effects. Another study on TB/HIV patients in Toronto showed that adverse reaction to TB Rx was associated with unsuccesful treatment outcome (Wobeser et al., 1999).

Critically, I found that treatment outcomes improved with the addition of co-trimoxazole prophylaxis (CPT) for HIV-infected patients. To the best of my knowledge, this is the first study to report a mortality reduction for CPT in HIV-infected TB patients living in Southeast Asia. The evidence for CPT's benefit in HIV-infected TB patients comes from a randomized, clinical trial in the Ivory Coast, which demonstrated a 46% mortality reduction for HIV-infected TB patients taking CTX, and a subsequent observational study in Malawi (Mwaugulu, Floyd et al., 2002; Witor et al., 1999).

HIV-infected TB patients in An Giang were younger than TB patients reported nationally: Seventy four percent of HIV-infected TB patients in Angiang was between 25-44 years of age compared with only 34% of all TB patients nationally reported in Vietnam ($p<0.001$) (WHO, 2006). Ratio between male and female among HIV-infected TB patients in this study compared to nationally reported was 3.5 vs. to 2.6 ($p<0.001$). (WHO, 2006).

Successful TB treatment outcome was a little bit higher in the group of patients who was not in the common TB treatment regimen. This group consists of re-treatment patients and extra pulmonary TB patients. This finding was consistent with other findings in this study that TB treatment outcome is better in extra pulmonary TB patients and re-treatment patients. It is not clear whether this finding reflect differences in pharmacologic effects of the 2 treatments or inherent virulence of the different types of TB.

Most HIV-infected TB patients had low socioeconomic status. Our study also recorded that the main HIV transmission route was heterosexual sex (35%), a level four times higher than reported in national data; intravenous drug use risk was only 16%, two times lower than nationally reported levels (MOH, 2004). Safe sex behavior should be promoted with 100% condom use to reduce HIV transmission.

Most of HIV/TB patients had AIDS symptoms at time of HIV diagnoses, suggesting that improved screening, voluntary counseling and testing (VCT), and

other outreach is necessary to prevent advanced-stage HIV among TB patients. In addition, this is consistent with other findings of significant (81%) immuno-suppression in HIV patients with TB that has been described in other studies (Wobeser at al., 1999). The presence of AIDS-related symptoms at HIV diagnosis in most HIV-infected TB patients suggests that patients in this study already had advanced HIV at the time of diagnosis, increasing their risk of death from either HIV or TB. If this is true, then early HIV detection, with early HIV treatment and/or TB preventive therapy, e.g., Isoniazid (INH) mono-therapy, should reduce the risk of developing TB.

I found that there was no relationship between previous diagnosis of TB and adverse treatment outcomes; this finding differs from a study reported from Ghana in 1999 that showed a two-fold risk for adverse treatment outcomes for history of prior TB diagnosis (Lawn and Acheampong, 1999). In addition, successful treatment rate in our study was 71%. The study in Canada showed this rate was 43% among HIV-infected TB patients. Death rate the patients in my study was 26% vs. 21% and 45% in studies in Spain and South Africa (Diez Ruiz-Navarro et al., 2005; Connolly et al., 1998).

Eighty three percent of patients in our study was diagnosed with smear-positive. This finding is higher than in others studies in Malaysia and Africa (55% and 50%, respectively) (Mahammad & Naing, 2004; Atomiya et al., 2002). This finding suggested that there may be many TB-pulmonary smear-negative missing in Angiang province. Laboratory capacity in sputum smear culture to diagnose pulmonary sputum

smear-negative is not available in Ang Giang. This may cause underestimation of this diagnoses. TB smear-negative diagnosis suggested an increased risk of unsuccesful treatment outcomes in our HIV-infected TB cohort, and the Ghana study also showed increased CFR associated with sputum smear-positive (Lawn and Acheampong, 1999; Connolly et al., 1998).

5.2 Limitations

This study is limited by a substantial amount of missing data from the cohort. However, I analyzed characteristics of missing cases of the important CPT factor to support for findings in my study. This study was affected by limited microbiology diagnostic tools available for diagnosis of pulmonary smear-negative TB. Therefore, an appreciable proportion of smear (-) TB cases may not be detected. In addition, poor laboratory capacity in An Giang limits evaluation of HIV stage, as CD4 count and viral load are not available. If this capacity were available we could have more finding for this study such as association between HIV stage and TB treatment outcome among HIV-infected TB patients.

I nevertheless can obtain useful information about how TB treatment can be improved among HIV-infected individuals by carefully monitoring and evaluating program data such as used in this analysis.

5.3 Conclusion and recommendation

The number of HIV-infected TB cases has increased in An Giang from 2001 through 2004. The mortality rate is high in HIV-infected TB patients in this setting, indicating health system needs to be improved and the need for more aggressive case detection and consistent treatment.

Co-trimoxazole prophylaxis therapy showed its effectiveness of preventing HIV patients from opportunistic infections (Pneumocystis Carrinii Pneumonia, Toxoplasmosis). In addition, even when HIV patients developed active TB, Co-trimoxazole remained helpful in reducing mortality among HIV-infected TB patients. Finding from this study provides support for applying the WHO recommendation to Vietnam on providing CTP to HIV-infected TB patients.

Microbiology laboratory capacity should be improved in order have standard diagnosis for TB patients such as improving culture capacity. Beside, CD4 count and viral load capacity need to be considered for further investment in the health care system.

An Giang has implemented the core activities recommended by WHO for responding to the TB and HIV syndemic (WHO, 2004), including HIV counseling and testing of TB patients, TB screening for HIV patients, and Co-trimoxazole preventive therapy. Nevertheless, the high mortality rate suggests that the quality and quantity of such activities should be increased and, even more important, that activities should be expanded to include ART, which has been demonstrated to be

life-saving in HIV-infected TB patients (Girardi et al., 2001; Dean et al., 2002). This study indicates a major need to expand HIV-related care and treatment in An Giang and throughout Vietnam, and Vietnam should responded to this need by increasing HIV counseling and testing of TB patients, TB screening in HIV patients, and providing ART.

In addition, further study should be carried out to resolve remaining uncertain issues that mentioned in the limitations (sputum smear-negative, HIV stage), and further studies comparing clinical outcome of CPT in HIV patients with and without TB. Finally, similar studies should be carried out in other provinces of Vietnam and/or in other countries.