

COMPARISON OF SOCIO ECONOMIC AND DEMOGRAPHIC CHARACTERISTICS OF HIV AND HIV-INFECTED TUBERCULOSIS PATIENTS IN KOTA BHARU HOSPITAL, KELANTAN

**Narwani Hussin, *Nyi Nyi Naing*

ABSTRACT

Tuberculosis (TB) is a significant cause of morbidity and mortality in HIV infected patients. There are many potential factors in HIV patients that influence them in high risk of contracting TB. The aim of this analysis was to compare the socio economic and demographic characteristics of HIV and HIV infected TB patients in Kota Bharu Hospital, Kelantan. This was a case control study on 97 HIV (control) and 97 HIV infected TB (case) patients. An interviewer guided questionnaire and review of medical record were done to gather the information. For controls, majorities were females (62.9%), Malays (83.5%), married (46.4%), Malaysian (94.8%) with a mean age of 32.34 ± 8.0 years. 83.5% of them completed their secondary school or tertiary education and 67.0% were from non-professional working group. About 56% of patients fell in the poverty group and the family member to room ratio was 2.4. For cases, majorities were males (83.5%), Malays (74.2%), single (48.5%), Malaysian (96.9%) with a mean age of 36.0 ± 8.4 years. 78.4% completed their secondary school or tertiary education and 73.2% were from non-professional working group. The "above poverty and below average" monthly household income group contributed of 45.4% of all patients. The family member to room ratio was 1.9. The significant difference between cases and control were found in age, family member to room ratio, sex and marital status. As a conclusion, the differences in those characteristics should be considered in assessing a risk of contracting TB in patients with HIV infection.

INTRODUCTION

Human Immunodeficiency Virus (HIV) infection has had a substantial effect on the incidence, clinical manifestations, treatment and outcome of Tuberculosis (TB). Escalating TB case rates over the past decade are largely attributable to HIV in which one-third of the increase in TB cases over the last five years can be attributed to the HIV epidemic (US Center for Disease Control, 1999). The impact of the two epidemics has ominous social and medical implications, and the already overstretched health services now have to face a tremendously increasing TB problem. Besides improving the cure rate by early diagnosis and prompt treatment of patients with TB, two major strategies that need consideration include BCG vaccination and preventive chemotherapy among HIV infected individuals. The latter strategy is considered as the most critical intervention that would help to limit the expected increase in clinical TB from the pool of HIV patients (Narain et al, 1992). The high prevalence of co-infection that was detected was associated with risk factors that could be amended by public health intervention (Martin et al, 2000). Thus risk factors that can be changed should be looked

into. The aim of this analysis was to compare the socio economic and demographic characteristics of HIV and HIV infected TB patients in Kota Bharu Hospital, Kelantan.

METHODOLOGY

A case control study was conducted at infectious diseases clinic, Hospital Kota Bharu from November 2003 to August 2004. A total of 194 patients were recruited and amongst them, 97 were cases (patients with HIV and PTB) and 97 were controls (patients with HIV only). No probability sampling method was applied since all patients who fulfilled the inclusion and exclusion criteria and gave consent were included in the study due to limited number of patients to meet the required sample size. An interviewer guided questionnaire was done to gather the information needed.

RESULTS

Table 4.1 showed the socio economic and demographic characteristics of 97 cases and 97 controls. For cases, their mean age was 36.0 ± 8.4 years. Majority (83.5%) of them were males. Malays were the major ethnic group with the percentage of 74.2%. Most of the patients were Malaysian (96.9%). Nearly half (48.5%) of them were singles. A total of 78.4% completed their secondary school or tertiary education. However, 73.2% were from non-professional working group. The "above poverty and below average"

monthly household income group contributed of 45.4% of all patients. The family member to room ratio was 1.9. For controls, their mean age was 32.3 ± 8.0 years. More than half (62.9%) were females. Malays were the major ethnic group with the percentage of 83.5%. Most of the patients were Malaysian (94.8%). Nearly half (46.4%) of them were married. A total of 83.5% of them completed their secondary school or

tertiary education. However, 67.0% were from non-professional working group. About 56% of patients fell in the poverty group and the family member to room ratio was 2.4. The significant difference in socio economic and demographic characteristics between cases and control were found in age, family member to room ratio, sex and marital status.

Table 4.1: Socio Economic And Demographic Characteristics Of 97 Cases And 97 Controls

Socio demographic characteristics	Cases		Controls		Indep t-test ^a	p value	d.f. ^b	p value ^c
	Mean (SD)	Frequency (Yo)	Mean (SD)	Frequency (%)				
Age (years)	36.0 (8.4)		32.3 (8.0)		-3.077	0.002		
Family member room ratio	1.9 (1.2)		2.4 (1.4)	-	2.744	0.007	-	-
Sex								
Male		81(83.5)		36 (37.1)	-	-	1	0.001
Female		16 (16.5)		61 (62.9)				
Race group								
Malays		72 (74.2)		81 (83.5)	-	-	1	0.113
Non Malays		25 (25.8)		16 (16.5)				
Nationality								
Malaysian		94 (96.9)		92 (94.8)	-	-	-	0.721 ^d
Foreigners		3 (3.1)		5 (5.2)				
Marital status								
Single		47 (48.5)		11 (11.3)	-	-	3	0.001
Married		27 (27.8)		45 (46.4)				
Divorced		13 (13.4)		15 (15.5)				
Widowed		10 (10.3)		26 (26.8)				
Education level group								
Nil & Primary		21 (21.6)		16 (16.5)	-	-	1	0.361
Secondary & Tertiary		76 (78.4)		81 (83.5)				
Occupation group								
Unemployed		23 (23.7)		29 (29.9)	-	-	1	0.331
Employed								
-Non professional		71 (73.2)		65 (67.0)				
-Professional		3 (3.1)		3 (3.1)				
Monthly household income group								
- Poverty		41 (42.3)		54 (55.7)	-	-	2	0.078
- Above poverty below average		44 (45.4)		38 (39.2)				
- Average		12 (12.4)		5 (5.2)				

^a Independent t-test

^b degree of freedom

^c Chi square test for independence

^d Fisher's Exact test

DISCUSSION

The significant difference in socio economic and demographic characteristics between cases and control were found in age, family member to room ratio, sex and marital status. At $p=0.05$, male and single were significantly higher in cases. Cases were significantly older than controls. However their houses were less crowded than controls. For other variables, the differences in percentage were found not statistically significant. Based on age and sex, studies done by Orege *et al.* (1993), showed that the association between HIV and TB was strong in each age and sex category with the highest found among males aged 10-29 years, and among females aged above 29 years. For age, according to US Center for Disease Control (1989), among all racial and ethnic groups and both sexes, TB case rates increase with increasing age. Single had a higher risk of PTB as compared to married and widowed. A total of 58 patients (30% from the total patients) were single and all of them were male. Probably these two variables had a relationship since male was also a significant risk factor. This study found out that the cases had a significantly lower family member to room ratio compared to control. This might be due to a large proportion of cases (nearly 50%) were single and lived alone.

CONCLUSION

TB is a significant cause of morbidity and mortality in HIV infected patients. Not only does HIV increase the risk of getting tuberculosis, but the mortality rate of HIV and tuberculosis patients is much greater compared to that of a patient who is just infected with HIV. The

differences in those characteristics of cases and controls should be considered in assessing a risk of contracting TB in patients with HIV infection. This would allow identification of patients at particularly high risk and may be suitable for targeted TB prophylaxis.

ACKNOWLEDGEMENT

We would like to express our appreciation to the staffs at the Physician Clinic, Kota Bharu Hospital, for their help in this study.

REFERENCES

- Martin V., Cayla J.A., Bolea A., Castilla J. (2000). TB and HIV co infection in intravenous drug users on admission to prison. *International Journal of TB & Lung disease*, 4(1): 41-6.
- Narain J.P., Raviglione M.C., Kochi A. (1992). HIV associated TB in developing countries: Epidemiology and strategies for prevention. *Tubercle & Lung Disease*, 73: 311-321.
- US Center for Disease Control. (1999). The deadly intersection between TB and HIV, 1-2.
- US Center for Disease Control. (1989). Screening for TB in High Risk Populations Recommendation of the Advisory Committee for Elimination of TB, 236-50.
- Orege, P. A., Fine, P. E. M., Lucas, S. B., Obura, M., Okelo, C., Okuku, P. and Were, M. (1993). A case control study on human immunodeficiency virus 1 (HIV I) infection as a risk factor for tuberculosis and leprosy in Western Kenya. *Tubercle and Lung Disease*, 74,377-381.