

## Tuberculosis among Prisoners: A Reappraisal on Data Record from an Endemic Area in Indochina

Rujittika Mungmunpantipantip<sup>1</sup>, Viroj Wiwanitkit<sup>2</sup>

<sup>1</sup>26 Medical Center, Bangkok Thailand

<sup>2</sup>Honorary professor, dr DY Patil University, Pune, India

**\*Corresponding Author:** Rujittika Mungmunpantipantip, 26 Medical Center, Bangkok Thailand.

### ABSTRACT

Tuberculosis is important infectious disease. This mycobacterial infection is presently highly endemic in Indochina countries including to Thailand. Several groups of local people are at risk to get the infection. Prisoner is a specific risk population to get tuberculosis in Thailand. Here, the authors reappraise on the available record on tuberculosis case searching among prisoners in a Thai rural province of Thailand, a tropical country in Southeast Asia. The expected tuberculosis detection rate among this population is between 0.68 % and 1.30 %. It can conclude that prisoner is an important population to be carefully managed in active tuberculosis case screening.

**Keywords:** control, tuberculosis, prisoner

### INTRODUCTION

*Mycobacterium tuberculosis* is an important pathogen Mycobacterial pathogen which can cause an important communicable disease namely tuberculosis. At present, tuberculosis is common in many developing countries including to the tropical countries in Indochina [1 -3]. As an important regional public health problem, the good public health management for tuberculosis control is required.

Currently, the active approach is proposed for success tuberculosis control. An important concept for this public health manipulation is active screening for tuberculosis among risk populations. An important group that poses high risk for tuberculosis infection is prisoner. Regarding the prisoner in jail, Armstrong et al. noted that “systematic screening and treatment of tuberculosis infection and disease” was an important health consideration [4]. In a recent report from Brazil, a very high incidence of tuberculosis among prisoners was reported [5]. Adequate case finding strategy is very important for management of this health problem [6].

Here, the authors reappraise on the available record on tuberculosis case searching among prisoners in a Thai rural province of Thailand, a tropical country in Southeast Asia.

### MATERIALS AND METHODS

The authors hereby reappraise on the public available epidemiology data on active tuberculosis case searching among prisoners in a rural province namely Suphanburi province in Thailand, a developing country in Indochina (available online at [bie.moph.go.th/e-insreport/file\\_province/5-66-1-2019-02-22-09-27-51.pdf](http://bie.moph.go.th/e-insreport/file_province/5-66-1-2019-02-22-09-27-51.pdf)). The setting is a rural province of Thailand located in the central region (about 120 kilometers from Bangkok, Thai capital). In Suphanburi province, the active screening including chest radiography and sputum microbiological examination have just been implemented for risk populations for tuberculosis infection including to prisoners. Here, we retrospectively analyzed available data during year 2018 in order to find the expected tuberculosis detection rate among the prisoners. In order to derive the expected rate of tuberculosis among the prisoner, the 95 % confidence interval calculation analysis was done.

### RESULTS

According to this study, 36cases (0.94 % or 940 per 100,000 screened cases) from overall 3,831 screened prisoners were detected to have tuberculosis. The expected range of tuberculosis detection rate among prisoners in the study setting is between 0.68% and 1.30% (or between 280 or 820 per 100,000 foreign migrant workers).

## DISCUSSION

Thailand is a tropical country with high burden of tuberculosis with the reported incidence about 156 per 100,000 population according to official report by Thai Ministry of Public Health, (<https://www.tbthailand.org/>). At present, Thailand is one of the countries that WHO mentioned for the urgent requirement for good tuberculosis control [2]. Recently, active tuberculosis screening polices was implemented and there are several focused target groups including to prisoner.

In fact, a high incidence of tuberculosis is well documented among prisoners, especially those with HIV infection [7 - 8]. In tropical Indochina, tuberculosis is very common and the extremely high incidence of tuberculosis is observable. Here, it can show that the incidence of tuberculosis among Thai prisoner is extremely high comparing to that observed among local Thai population. In a recent similar report from another province of Thailand, a slightly higher incidence, 1.6 %, of tuberculosis among prisoner was reported [9]. Therefore, the high incidence of tuberculosis among Thai prisoners in Thai jails is confirmed and the advantage of active tuberculosis screening among the prisoners is expectable.

In fact, not only tuberculosis but also other medical problem can be seen among the prisoners. In fact, the prisoner undergone correctional process usually has limited access to health facilities. The crowded area is common in jail and the communicable disease can easily occur. The disease might widely spread among prisoner as well as officers who work in the prison [4]. Indeed, the mentioned transmission already occurred in Thailand. In a recent report, Mongkoljitet al. showed an evidence for the transmission of tuberculosis in a prison in

Nakhon Ratchasima, another rural province of Thailand [10].

## CONCLUSION

The high expected tuberculosis infection rate among prisoner in our study implies that there is a need for tuberculosis control among prisoners in our setting.

## REFERENCES

- [1] Paton NI, Borand L, Benedicto J, Kyi MM, Mahmud AM, Norazmi MN, Sharma N, Chuchottaworn C, Huang YW, Kaswandani N, Hoi LV, Lui GC, Mao TE. Diagnosis and Management of Latent Tuberculosis Infection in Asia: Review of Current Status and Challenges. *Int J Infect Dis.* 2019 Jul 10. pii: S1201-9712(19) 30289-9.
- [2] Wise J.WHO identifies 16 countries struggling to control tuberculosis. *BMJ.* 1998 Mar 28; 316(7136):957.
- [3] Khan MK, Islam MN, Ferdous J, Alam MM. An Overview on Epidemiology of Tuberculosis. *Mymensingh Med J.* 2019 Jan; 28(1): 259-266.
- [4] Armstrong LR, Lobato MN, Ho C, France AM, Haddad MB. Tuberculosis in Jails and Prisons: United States, 2002-2013. *Lambert LA, Am J Public Health.* 2016 Dec; 106(12):2231-2237.
- [5] Paião DS, Lemos EF, Carbone AD, Sgarbi RV, Junior AL, da Silva FM, Brandão LM, Dos Santos LS, Martins VS, Simionatto S, Motta-Castro AR, Pompílio MA, Urrego J, KoAI, Andrews JR, Croda J. Impact of mass-screening on tuberculosis incidence in a prospective cohort of Brazilian prisoners. *BMC Infect Dis.* 2016 Oct 3;16(1):533.
- [6] Öngen G, Börekçi Ş, İçmeli ÖS, Birgen N, Karagül G, Akgün S, Kılıçaslan Z, Umut S. Pulmonary tuberculosis incidence in Turkish prisons: importance of screening and case finding strategies. *Tuberk Toraks.* 2013;61 (1): 21-7.
- [7] Dianatinasab M, Joulaei H, Ghorbani M, Zarei N, Rezaeian S, Fararouei M, Greenwald ZR. Prevalence of Tuberculosis in HIV-positive Prisoners: A Systematic Review and Meta-analysis. *AIDS Rev.* 2018 Apr-Jun;20(2):114-124.
- [8] Baussano I, Williams BG, Nunn P, Beggiato M, Fedeli U, Scano F. Tuberculosis incidence in prisons: a systematic review. *PLoS Med.* 2010 Dec 21;7(12):e1000381.

## Tuberculosis among Prisoners: A Reappraisal on Data Record from an Endemic Area in Indochina

- [9] Morasert T, Worapas W, Kaewmahit R, Uphala W. Prevalence and risk factors associated with tuberculosis disease in Suratthani Central Prison, Thailand. *Int J Tuberc Lung Dis.* 2018 Oct 1;22 (10):1203-1209.
- [10] Mongkoljit S, Saringearingul H, Smittipat N, Thong-On A, Palittapongarnpim P. Evidence for the transmission of tuberculosis in a prison in Nakhon Ratchasima, Thailand. *Int J Tuberc Lung Dis.* 2001 Jun;5 (6):586-7.

**Citation:** Rujittika Mungmunpantipantip & Viroj Wiwanitkit, "Tuberculosis among Prisoners: A Reappraisal on Data Record from an Endemic Area in Indochina", *International Journal of Research Studies in Medical and Health Sciences.* 2019; 4(8): 11-13.

**Copyright:** © 2019 Rujittika Mungmunpantipantip & Viroj Wiwanitkit, This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.