

# Clinico-Epidemiology Study of Cutaneous Tuberculosis in Dermatology and Venereology Department, Dr. M. Djamil Hospital in January 2017-December 2019

Satya Wydy Yenny<sup>1</sup>, Tutty Ariani<sup>2</sup>, Resya I Noer<sup>3</sup>

<sup>1</sup>Andalas University, Medical Faculty, Department of Dermatovenereology / Dr M. Djamil Hospital PerintisKemerdekaan, Padang, West Sumatra25171, Indonesia  
*satyawidyayenny[at]med.unand.ac.id*

<sup>2</sup>Andalas University, Medical Faculty, Department of Dermatovenereology / Dr M. Djamil Hospital PerintisKemerdekaan, Padang, West Sumatra 25171, Indonesia  
*tutty\_masri[at]yahoo.com*

<sup>3</sup>Andalas University, Medical Faculty, Department of Dermatovenereology / Dr M. Djamil Hospital, PerintisKemerdekaan, Padang, West Sumatra 25171, Indonesia  
*resyainoer[at]gmail.com*

**Abstract:** Background: Cutaneous tuberculosis (CTB) is one of manifestation of Extrapulmonary tuberculosis which depend on the source of the infection and the immunity of the host. The diagnosis is based on clinical manifestation, histopathological examination, finding mycobacteria in tissue or culture and host reaction to *M. tuberculosis* antigen. Objective: The aim of this study was identify clinico-epidemiology of patient with Cutaneous tuberculosis in in Department of Dermatology and Venereology from January 2017-Desember 2019. Method: The study was done with retrospective design by collecting data from medical records of patient with cutaneous tuberculosis in Department of Dermatology and Venereology from January 2017-Desember 2019. All patients were diagnosed based on clinical presentation and histopathological examination. Result: A total of 23 patients were diagnosed as CTB from January 2017-December 2019 with 15 males and 8 females. The most common type of CTB was Tuberculosis verrucous cutis. The most commonly affected was adult (age 25-64 years). All patients in this study have duration of this disease of  $\geq 6$  months and have no history of tuberculosis and family history with the most common site of the lesion on the limb. Conclusion: Cutaneous tuberculosis had many variation of clinical manifestation. The incidence of CTB in Dr. M. Djamil Hospital was 23 patients from January 2017-December 2019 with Tuberculosis verrucous cutis was the most common type.

**Keywords:** Cutaneous tuberculosis, Scrofuloderma, Lupus Vulgaris, Tuberculosis verrucous cutis

## 1. Introduction

Tuberculosis (TB) is now becoming one of the cause of death in worldwide caused by *Mycobacterium tuberculosis*. There are two types of clinical manifestation; pulmonary TB (PTB) and extrapulmonary TB (EPTB). Cutaneous Tuberculosis (CTB) is one of manifestation of EPTB which depend on the source of the infection and the immunity of the host. The diagnosis is based on clinical manifestation, histopathological examination, finding mycobacteria in tissue or culture and host reaction to *M. tuberculosis* antigen.<sup>1,2</sup>

Cutaneous tuberculosis has many variation of clinical presentation. The infection can occur directly from the skin (tuberculous chancre, TB verrucous cutis, and few cases of lupus vulgaris) or endogenously, with the secondary involvement of skin and the hematogenous route, or by infection from an already mycobacterium infection (scrofuloderma).<sup>3</sup>This study was conducted to identify the clinic-epidemiology profile of patient with CTB in Dr. M. Djamil Hospital Padang period between January 2017 to December 2019.

## 2. Method

This retrospective study design was done by collecting data from the medical records from all patient diagnosed CTB in Dermato-venereology Department, Dr. M. Djamil Hospital Padang between January 2017 to December 2019. All the patients were diagnosed depending on the clinical finding and histopathology analysis. All the patient were classified by sex, age, type of cutaneous tuberculosis and duration of disease, distribution of lesions, history of pulmonary tuberculosis.

## 3. Result

A total of 23 patients were diagnosed as CTB from January 2017-Desember 2019 (table 1), 15 males (65% female) and 8 females (35%). The most common type of CTB was Tuberculosis verrucous cutis seen in 56,5%% patient. There were 15 males and 8 females. The most commonly affected was adult with the age group ranged from 25-64 years (56,5%). All patients in this study have duration of this disease of  $\geq 6$  months and have no history of tuberculosis and family history. The most common site of the lesion is on the limb (74%) (table 2).

Volume 9 Issue 10, October 2020

[www.ijsr.net](http://www.ijsr.net)

Licensed Under Creative Commons Attribution CC BY

**Table 1:** Prevalence of Cutaneous Tuberculosis in Dermatology and Venerology Department, Dr. M. Djamil Hospital Padang between January 2016 and December 2019.

Year	Case Number (N= 23)	Percentage (%)
2017	6	26
2018	9	39
2019	8	35

**Table 2:** Clinico-epidemiology profile of cutaneous tuberculosis in Dermatology and Venereology Department, Dr. M. Djamil Hospital Padang between January 2016 and December 2019

No	Clinical Profile	Patient (n)	Percentage (%)
1	Sex		
	Female	15	65
	Male	8	35
2	Age		
	Infant : 0-1	0	0
	Childhood : 1-4	0	0
	Adolescence : 5-14	3	13
	Young adult : 15-24	6	26
	Adult : 25-64	13	56,5
Elderly : >65	2	4,5	
4	Type of CTB		
	Tuberculolosis Verrucous Cutis	13	56,5
	Scrofuloderma	5	21,75
	Lupus Vulgaris	5	21,75
6	Distribution of Lesions		
	Face	5	21,7
	Hand	1	4,3
	Limb	17	74
5	Duration of Disease		
	≥ 6 months	23	100
	≤ 6 months	0	0
7	Family History		
	Yes	0	0
	No	23	100
8	History of Pulmonal Tuberculosis		
	Yes	0	0
	No	23	100

#### 4. Discussion

Tuberculosis infection is always becoming an interest for dermatologist because of all its variation. Cutaneous tuberculosis is one of manifestation of mycobacterium infection. The incidence is only 1–1.5% of all extrapulmonary manifestations. Tuberculosis is now one of the cause of death in the world. In 2016, there were 1.3 million deaths caused TB in HIV-negative patient (below 1.7 million in 2000) and 374,000 deaths in HIV-positive patient. In 2016, there were 10.4 million people diagnosed TB: 90% adults, 65% men, 10% people with HIV (74% in Africa), and 56% of in India, Indonesia, China, Philippines, and Pakistan.<sup>3</sup>

Spelta and Diniz in their study found that there was 29 patient diagnosed in Cassano Hospital, Brazil. Zhang et al found 666 case of Cutaneous Tuberculosis in 50 years (from 1957-2013). In Indonesia, there were no true report that describe the true incidence of Cutaneous Tuberculosis.<sup>4,5</sup> In this study, there were 23 patients was diagnosed based on the clinical manifestation and histopathological examination, which consist of fifteen female and eight male. Zhang et al.

reported that the male and female ratio was 1:1.4 (502 versus 692), while TVC was male-predominant.<sup>5</sup>

The patients in this study were mostly in the age group 25-64 years. Spelta and Diniz in their study reported the average age of the patient diagnosed as Cutaneous tuberculosis was 35 years.<sup>4</sup> Singh et al reported in their study that the majority of the cases in their study were in the age group 11-30 years. Singh et al. suggest that Cutaneous tuberculosis might happen because adults may be prone to the infection due to outdoor activities.<sup>6</sup>

The two most frequent forms of skin tuberculosis are lupus vulgaris (LV) and scrofuloderma with the most common site of lesion is on the limb. In the tropics, LV is rare, whereas scrofuloderma and verrucous lesions predominate. LV is more common in women, whereas tuberculosis verrucous cutis is more often found in men. Scrofuloderma usually occurs in adolescents and the elderly, whereas LV may affect all age groups. Scrofuloderma and tuberculosis verrucous cutis commonly found in developing countries, especially low socioeconomic groups and generally in children and young adult.<sup>2</sup> Tuberculosis Verrucous Cutis was the commonest type of CTB in this study, followed with Scrofuloderma and Lupus vulgaris. Spelta and Diniz reported Erythema Induratum of Bazin was found in twelve cases from 29 cases reported.<sup>4</sup>

Cutaneous tuberculosis can occur through a direct infection on the skin and (or through the hematogenous route of a distant TB or by an already mycobacterium infection source. The most common site of infection is in the upper and lower limbs, buttock and hands due to an occupational disease or self-inoculation.<sup>3</sup> In this study, the most common site of the infection is on the limb (74%). Puri also found that 50% patient in her study had cutaneous tuberculosis cutis on the limb. This study also has similar result with Spelta and Diniz. Spelta and Diniz found in their study that in 65.8% cases, the lesion were located in the lower limbs.<sup>4,7</sup>

Cutaneous tuberculosis is a chronic infection by *M. tuberculosis* and sometimes can lead to a missed and delayed diagnosis. In this study, all patients diagnosed as cutaneous tuberculosis have duration of lesion more than six months. Singh et al. found in their study that duration of disease ranged from 1 month to 10 years.<sup>6</sup> Puri in India found from twenty patients, 55% patient had duration of disease 6-12 months.<sup>7</sup> Singh et al. considered the late presentation of cutaneous tuberculosis due to cutaneous tuberculosis are asymptomatic and sometimes patient are late to seek medical treatment from doctors or dermatologist.<sup>6</sup>

Family history and history of pulmonary tuberculosis is important to support the diagnosis of cutaneous tuberculosis. Family history is not quite common for the transmission of cutaneous tuberculosis, but it's still can be considered as risk factor for direct transmission. In this study, all the patient had no family history of cutaneous tuberculosis and history of pulmonary tuberculosis. This result was different from some literatures. Singh et al. and Salissou et al. found four patient with personal family history of cutaneous tuberculosis in their study.<sup>6,9</sup>

## 5. Conclusion

The incidence of CTB in Dr. M. Djamil Hospital was 23 patients from January 2017-December 2019 with Tuberculosis Verrucous Cutis was the most common type. More studies should be done to know the incidence of cutaneous tuberculosis in other hospital in Indonesia.

## References

- [1] Singh P, Kant S, Gaur P, Tripathi A, Pandey S. Extra Pulmonary Tuberculosis: An Overview and Review of Literature. *Int J Life-Sciences Sci Res.* 2018;4(1):2016–8.
- [2] Sethi A. Tuberculosis and Infections with Atypical Mycobacteria. In: Kang S, Masayuki A, Bruckner A, Enk A, Margolis D, McMichael A, et al., editors. *Fitzpatrick'S Dermatology 9th Edition.* McGraw Hill; 2019. p. 2858–75.
- [3] Tirado-Sánchez A, Bonifaz A. Cutaneous Tuberculosis: a Review of the Current Literature. *Curr Trop Med Reports.* 2018;5(2):67–76.
- [4] Spelta K, Diniz LM. Cutaneous tuberculosis: A 26-year retrospective study in an endemic area of Tuberculosis, Vitória, Espírito Santo, Brazil. *Rev Inst Med Trop Sao Paulo.* 2016;58(1).
- [5] Zhang J, Fan YK, Wang P, Chen QQ, Wang G, Xu AE, et al. Cutaneous tuberculosis in China – A multicentre retrospective study of cases diagnosed between 1957 and 2013. *J Eur Acad Dermatology Venereol.* 2018;32(4):632–8.
- [6] Singh EN, Purohit S, Agarwal US. Clinico-epidemiological study of cutaneous tuberculosis in a tertiary care hospital of Rajasthan. 2017;(9):317–24.
- [7] Puri N. A clinical and histopathological profile of patients with cutaneous tuberculosis. *Indian J Dermatol.* 2011;56(5):550–2.
- [8] Salissou L, Adehossi E, Laouali SM, Mamadou S, Nouhou H. Cutaneous tuberculosis in Niger: a 9-year retrospective study. *Our Dermatology Online.* 2015;6(2):153–6.

## Author Profile



**Satya WydyaYenny** received the dermatologist degrees in Medical Faculty, Indonesia University. She now as the head of Dermatology Recidency Program in Andalas University



**TuttyAriani** received the dermatologist degrees in Medical Faculty, Andalas University. She now with Dr M Djamil Hospital, Padang, West Sumatera, Indonesia as a Head of Infection-Dermatology division.



**Resya I Noeris** a resident of dermatology and venereology, Medical Faculty, Andalas University.