

Clinico-epidemiological Profile of Cutaneous Tuberculosis in Dr. M. Djamil Hospital Padang Period of 2015 – 2017

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Abstract: Cutaneous tuberculosis (CTB) is a relatively rare manifestation with a wide spectrum of clinical profiles depending on the source of infection and the immune status of the host that is influenced by co morbidity diseases. The study was conducted to assess the epidemiology and clinical profile of patient with CTB in Dr. M. Djamil Hospital Padang. A retrospective study had been done by collecting data from the medical records of patients with diagnosis of CTB at Dr. M. Djamil Hospital Padang between January 2015 and December 2017. A total of 17 cases are included in the final analysis. There were 9 males and 8 females with ratio males : females was 1.3:1 and generally occurs in young adults (64.7%). All of patients had no family history of tuberculosis infection. Among these patients, 76.48% was scrofuloderma, 11.76% was lupus vulgaris and 11.76% was tuberculosis verrucosa cutis. Neck was the most common site of involvement. Regional lymphadenopathy was found in 82.35%. Pulmonary tuberculosis was found in 76.47% patients. There were 3 patients had acquired immune deficiency syndrome (AIDS), 2 patients had diabetes mellitus, 1 patient had chronic kidney disease and 1 patient had malnutrition. Combination of scrofuloderma and morbus hansen was noted in one patient. CTB had wide variation with most of cases having co morbidity diseases. More multi-department studies should be carried out to obtain clinic-epidemiological profile of cutaneous tuberculosis in Dr. M. Djamil Hospital, Padang, Indonesia.

1 INTRODUCTION

Globally in 2016 there were an estimated 10,4 million incident cases of TB (range 8.8 million to 12.2 million), equivalent to 140 cases per 100 000 population. The 30 high TB burden countries accounted for 87% of all estimated incident cases worldwide. The five countries that stood out as having the largest number of incident cases in 2016 were India, Indonesia, China, the Philippines and Pakistan, which together accounted for 56% of the global total. Of these, China, India and Indonesia alone accounted for 45% of global cases in 2016. Nigeria and South Africa each accounted for 4% of the global total (WHO, 2017). CTB is relatively uncommon and not a well-defined disease, comprising only 1-1.5% of all extra-pulmonary manifestations (Zyl et al., 2015). The problem is now further complicated by relentless spread of HIV which causes AIDS pandemic and the emergence of multidrug resistant strains (Verma and Mahajan, 2007).

Infection can occur through exogenous routes,

i.e., cutaneous inoculation takes place directly on the skin (tuberculous chancre, tuberculosis verrucosa cutis and some cases of lupus vulgaris) or endogenous ones, with cutaneous involvement occurring secondarily, through hematogenous route from a distant tuberculosis focus or by contiguity from an already established focus (most cases of lupus vulgaris, scrofuloderma, miliary tuberculosis and orificial tuberculosis) (Dias et al., 2014).

The development of clinical manifestations in CTB should be understood as the outcome of interactions between the environment, the agent and the host. The factors are infected person's cellular immunity state, infection route, bacilli resistance, virulence factors, individual's inherent factors (age, sex, race), factors that lead to immunosuppression such as malnutrition, alcoholism, silicosis, diabetes mellitus, gastrectomy, and immunosuppressive conditions caused by disease or drugs are also important and environmental factors (Santos et al., 2014).

This study was conducted to assess the epidemiology and clinical profile of patient with CTB

in Dr. M. Djamil Hospital Padang period between January 2015 and December 2017.

2 METHODS

The present study is retrospective study using medical records patients with CTB in Dr. M. Djamil Hospital Padang between January 2015 and December 2017, which were diagnosed on the basis of clinical presentation and histopathology finding. These cases were classified by year. The medical records consist of age, sex, family history of tuberculosis infection, duration of disease, distribution of lesions, regional lymphadenopathy, x-ray chest, co-morbidity disease and type of cutaneous tuberculosis.

3 RESULT

A total of 17 patients with CTB were identified during the period, which represents 0.48% of the total 3508 cases of tuberculosis. Of the various patterns of CTB seen. The most common was scrofuloderma seen in 76.48% patient. Followed by tuberculosis cutis verrucosa and lupus vulgaris in 11.76% patient. There were 9 males and 8 females with ratio males : females was 1.3:1. The age of the patients ranged from 7 to 67 years. The most commonly affected was young adult with the age group was 18-40 years (64.7%). Followed by adult, the age group 41-65 years was 23.5%, childhood the age group 2-10 years and elderly the age group more than 65 years were 5.9%. The duration of the lesion ranged from 1 month to 24 months with a mean 5.31 months. There were 70.59% patient had CTB for less than 6 months duration. All of patient had no family history of pulmonary tuberculosis.

Neck was the most common site of involvement seen in 64.71% cases. The others site was face, back, arm, hand, inguinal and leg. There were 82.35% patients had lymphadenopathy and the most common was cervical region. Pulmonary tuberculosis was found in 13 patients. Beside that, there were 3 patients had acquired immune deficiency syndrome (AIDS), 2 patients had diabetes mellitus, 1 patient had chronic kidney injury and 1 patient had malnutrition. Five patients had more than 1 co-morbidity disease. Combination of scrofuloderma and morbus hansen was noted in one patient.

4 DISCUSSION

CTB is relatively uncommon comprising only 1-1.5% of all extra-pulmonary manifestations.² During the period, a total of 17 patients with CTB were identified, which represents 0.48% of the total 3508 cases of tuberculosis in Dr. M. Djamil Hospital. There is an increase in cases of CTB each year during this period. Compare with study from Nepal by Mathur M et al in 2014 reported incidence of cutaneous tuberculosis in Nepal was 0,1% (Mathur and Pandey et al., 2014). Thus, the incidence of CTB in Dr. M. Djamil Hospital is still higher than other area.

Of the 17 patients, there were 9 males and 8 females. It means ratio males : females was 1.3:1. The most commonly affected was young adult with the age group was 18-40 years (64.7%). Punia RS et al reported in 2015, 54% of patients were in 2nd and 3rd decade of life (Punia et al., 2015). Preponderance for the younger age has also been in the other studies from India. Males : females ratio was almost equal. Young adult is productive periods, which allows frequent contact with tuberculosis-infected patients thus increasing the risk of transmission. Beside that, skin trauma due to increased physical activity during younger age as well as contact with active tuberculosis cases at an early age may be the underlying factors for younger age predilection (Gopinathan et al., 2001). All of patient had no family history of tuberculosis infection.

Scrofuloderma was the commonest type of CTB in this study. Followed by tuberculosis verrucosa cutis, lupus vulgaris and tuberculosis caseosa cutis. Similar with cases in Cipto Mangunkusumo hospital Jakarta at 2010, scrofuloderma was the most common type of CTB, followed by tuberculosis verrocusa cutis. Scrofuloderma and tuberculosis verrucosa cutis commonly found in developing countries, especially low socioeconomic groups and generally in children and young adult (Djuanda, 2016).

The duration of the lesion ranged from 1 month to 24 months with a mean 5.31 months. There were 70.59% patient had CTB for less than 6 months duration. It means that most of patients can be diagnosed and treated at an early stage. Neck was the most common site of involvement observed (64.6%) in comparison to other sites such as arm, back, axilla, hand and leg, which is similar to other studies reported. Sharma S et al reported in 2015, neck and axilla being the most common in scrofuloderma (Sharma et al., 2015).

Regional lymphadenopathy was seen in 13 patients (82.35%) and cervical lymph nodes were commonly affected in scrofuloderma. The similar

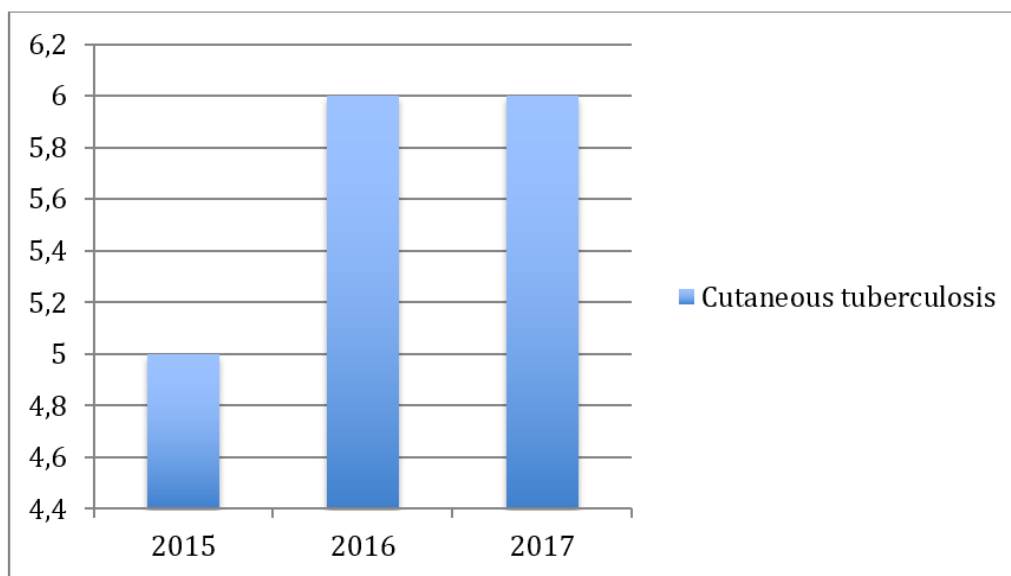


Figure 1. Incidence of cutaneous tuberculosis in Dr. M. Djamil Hospital Padang (2015-2017)

Table 1. Clinico-epidemiological profile of cutaneous tuberculosis at Dr. M. Djamil Hospital Padang period of 2015-2017

No.	Epidemiology and Clinical Profile	Case Number (n=16)	Percentage of Total Cases (%)
1.	Sex		
	Male	9	52.94
	Female	8	47.06
2.	Age (year)		
	Infant : 0 – <2	0	0
	Childhood : 2 – 10	1	5.9
	Adolescence : 11 – 17	0	0
	Young adult : 18 – 40	11	64.7
	Adult : 41 – 65	4	23.5
	Elderly : >65	1	5.9
3.	Duration of disease		
	< 6 months	12	70.59
	≥ 6 months	5	29.41
4.	Distribution of lesions		
	Face	1	5.9
	Neck	11	64.6
	Axilla	1	5.9
	Trunk	1	5.9
	Inguinal	1	5.9
	Arm	1	5.9
	Leg	1	5.9
	Other	0	5.9
4.	Family history		
	Yes	0	0
	No	17	100
5.	Regional lymphadenopathy		
	Yes	14	82.35
	No	3	17.65
6.	X-ray chest : Pulmonary tuberculosis		

	Yes	13	76,47
	No	4	23.53
7.	Co-morbidity		
	No co-morbidity	4	23.53
	AIDS	3	17.65
	Diabetes mellitus	2	11.76
	Chronic kidney injury	1	5.9
	Malnutrition	1	5.9
8.	Clinical diagnosis		
	Scrofuloderma	13	76.48
	Lupus vulgaris	2	11.76
	Tuberculosis verrucosa cutis	2	11.76

case had been reported by Shrestha SB et al in 2015 (Shrestha et al., 2015). The pulmonary tuberculosis was found in 12 patients (75%). Based on theory, infection of CTB can occur through exogenous routes, i.e., cutaneous inoculation takes place directly on the skin (tuberculous chancre, tuberculosis verrucosa cutis and some cases of lupus vulgaris) or endogenous ones, with cutaneous involvement occurring secondarily, through hematogenous route from a distant tuberculosis focus or by contiguity from an already established focus (most cases of lupus vulgaris, scrofuloderma, miliary tuberculosis and orificial tuberculosis) (Dias et al., 2014; Santos et al., 2014).

There are many other co-morbidity for CTB such as HIV infection (AIDS), transplantation, malnutrition, diabetes, renal failure, liver failure, cancers, immunosuppressive drugs and corticosteroids (Shrestha et al., 2015). There were 3 patients had acquired immune deficiency syndrome (AIDS). In recent years, the epidemiology of tuberculosis has been adversely affected by the human immunodeficiency virus (HIV) pandemic. In fact, HIV infection is now the most important predisposing factor to the development of active tuberculosis. Moreover, tuberculosis and HIV infection pose the two greatest global public health threats owing to their high morbidity and mortality rates (Bonamonte et al., 2017). There were 2 patients had diabetes mellitus, 1 patient had chronic kidney injury and 1 patient had malnutrition. Four patients had more than 1 co morbidity disease. All these condition play an important role in CTB.

Combination of scrofuloderma and morbus hansen was noted in one patient. Tuberculosis (TB) and leprosy, the 2 major mycobacterial infections of humans, are classic granulomatous diseases that still affect millions of people. Both infections are now curable, but no highly effective vaccine is yet available for either of them. Both are ancient scourges with a wide range of cutaneous manifestations, and both are infamous for their ability to mimic other

diseases and sometimes fool even the most skilled diagnostician (Scollard et al., 2015).

5 CONCLUSION

The incidence of CTB in Dr. M. Djamil Hospital increased during the period and the most commonly affected was young adult. Scrofuloderma was the most common type. Majority of patients were accompanied by pulmonary tuberculosis and others disease like acquired immune deficiency syndrome (AIDS), diabetes mellitus, chronic kidney disease and malnutrition. More multi-centered studies should be carried out to obtain epidemiological data of cutaneous tuberculosis in Dr. M. Djamil Hospital, Padang, Indonesia.

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