International Scholars Journals

International Journal of Microbiology Research and Reviews ISSN 2329-9800 Vol. 6 (5), pp. 336-339, May, 2017. Available online at www.internationalscholarsjournals.org © International Scholars Journals

Full Length Research Paper

Survey on the prevalence of mycobacterium tuberculosis among the patient visiting Nekemte hospital

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Accepted 13 October, 2015

Tuberculosis is the bacterial disease that is caused by mycobacterium tuberculosis and is the fatal disease distributed worldwide. The study was conducted to assess the prevalence of mycobacterium tuberculosis among the patient visiting Nekemte hospital. A cross sectional study was conducted in Nekemte hospital from February 2005 E.C to march 2005 E.C. During the study period, 731 people were infected which considered of 322 of female and 409 males. Tuber colossi infection was examined according to standard procedures and identified in male and female in age group ≤5yrs 26(3.56%), 6-10yrs 54(7.39%),11-20yrs 138(18.88%),21-50yrs 452(61.83%),and>50yrs. 61(8.34%).Over all prevalence was observed 44% of female and 56% male patients. The infection of tuberculosis clinically manifested as loss of weight, coughs, highly sweated, fever and chest pain. Tuberculosis is common disease in the world especially sub-Saharan Africa. This indicates that tuberculosis is prevalent in rural and urban areas. Large and more compressive studies are recommended to reduce the prevalence of tuberculoses in Nekemte.

Keywords: Mycobacterium tuberculosis, bacteria, diseases, patients, Nekemte hospital.

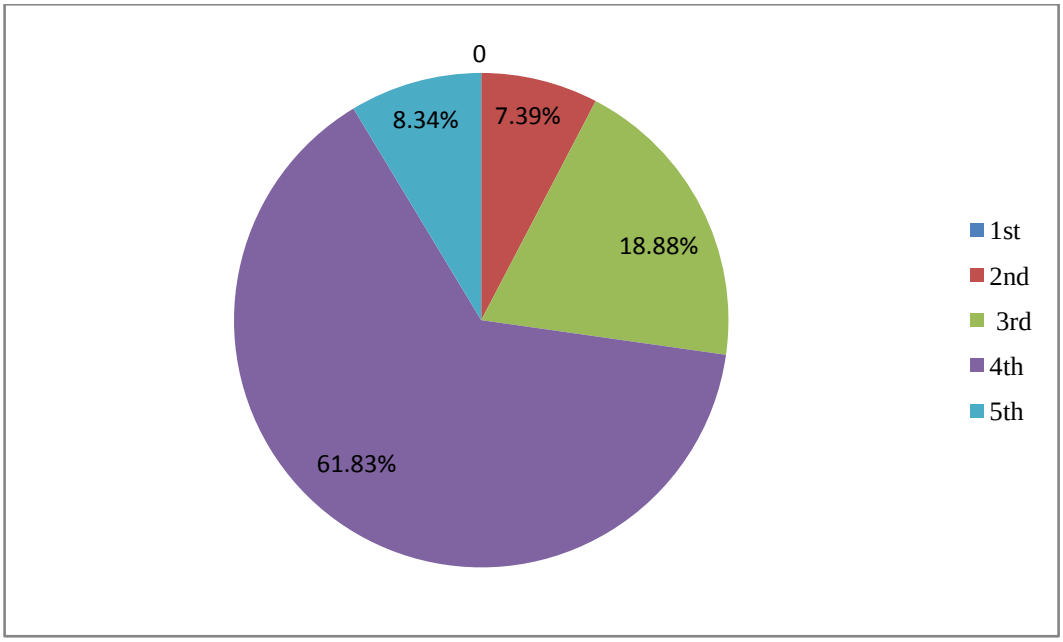
INTRODUCTION

Mycobacterium tuberculosis is straight or slightly curved rod 1N to 4n long and 0.2 N to 0.8 N. It may be arranged singly or in groups. It is non-motile, non-spore forming and non-capsulated. Beaded or barred staining is seen in *mycobacterium tuberculosis*. Acid fast rods and granules from young culture are also reported and when they are injected into susceptible animal, they produce tuberculosis (Gupte, 2002). Mycobacterium tuberculosis is small, aerobic rod whose cell wall contains au layer of waxy material that greatly enhances resistance to the adverse environmental conditions (pommervile, 2007).

Tuberculosis is the major cause of death worldwide. At the time tuberculosis was rampant, causing one seventh of all deaths in Europe and one third of deaths among productive young adults. Today tuberculosis remains a global health problem of enormous dimension (Prescott *et al.*, 2002). The incidence of tuberculosis (per 100,000 people) in Ethiopia was last reported at 261.00, according to a World Bank report released in 2011. The incidence of tuberculosis (per 100,000 people) in Ethiopia was 265.00 in 2009, according to World Bank report, published in 2010. The incidence of tuberculosis (per 100,000 people) in Ethiopia was reported at 271.00 in 2008, according to the World Bank. Incidence of tuberculosis is the estimated number of new pulmonary, smear positive and extra pulmonary tuberculosis cases (World Bank, 2010).

Mycobacterium tuberculosis is common and in many cases lethal, infectious disease caused by various strains of mycobacterium, usually *mycobacterium tuberculosis*. Tuberculosis typically attacks the lungs, but can also affect other parts of the body. It is spread through the air

Fig 1. Age group vs. number of TB patient.



when people who have active tuberculosis infections cough, sneeze or otherwise transmit respiratory fluids through the air. Most infections are asymptomatic and latent. Tuberculosis is a very serious disease and also difficult to control easily since it can be distributed through air (Wikipedia.org). This study was conducted to assess the prevalence of *mycobacterium tuberculosis* among the patient visiting Nekemte hospital.

METHODOLOGY

Study area description

Nekemte is found in the western part of Ethiopia in Oromia region. It is one of the old towns in the country. However, it is highly under developed because low attention was given to its development by the successive regime. Nekemte town is situated on a flat land scope. It is located at a distance of 331 Km West of Addis Ababa, 110km North West of Jimma zone in the Oromia regional state (www. oromia .com).

Study design

The study subject has been suspected patient of tuberculosis in Nekemte hospital from 2004-2005 E.C. All suspected patient of tuberculosis in the given time were considered.

Study population

Those people who were suspected to have tuberculosis and diagnosis from the period 2004-2005 E.C were studied.

Methods of data analysis

The collected data of tuberculosis patients obtained from Nekemte hospital were interpreted and analyzed in stable and text form depending on age and sex group.

RESULT AND DISCUSSION

The prevalence of tuberculosis is decreasing, from time to time due to the awareness of communities regarding to, tuberculosis status which consists of infection, transmission, symptom, distribution, prevention and treatment (wikipadia. org).

According to WHO 2005 report on global tuberculosis control, the treatment success rates under the DOTS program among 22 high burden countries (HBCs) varied from 60% in Uganda to 93% in china, with an average of 83% (WHO, 2005).

During the last decades, TB has been known to western societies as the old man's friend, despite the staking high incidence among the productive age groups in low income countries. Still the concept of regarding TB as primarily a male disease has some bearing in light of the global notification rates regularly collected by the WHO. The male to female ratio of TB cases reported to the WHO is around 1.5-2.1 in all regions of the new world. It becomes 58% males and 42% females (WHO, 2000). Studying the age specific notification rates reveals that the gap between the different region, and also the magnitude of the different between reported case (www.who. Int).

According to the present study males are more prone than female that their ratio ranges around 1-1.28 and it

Table 1. prevalence of TB patients with age group from September 2004 E.C to March 2005 E.C in Nekemte hospital.

Year	*Age group*	*Sex*	*Month*												
			Sept.	Oct.	N ov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Page
2004 E.c	5yrs%	M	1(100)	0(0)	0(0)	0(0)	1(100)	0(0)	1(100)	0(0)	1(100)	0(0)	0(0)	0(0)	1(100)
		F	0(0)	0(0)	0(0)	0(0)	0(0)	1(100)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	6-10yrs%	M	0(0)	0(0)	1(50)	1(50)	0(0)	0(0)	0(0)	0(0)	0(0)	2(50)	0(0)	0(0)	1(100)
		F	0(0)	0(0)	1(50)	1(50)	0(0)	0(0)	1(100)	1(100)	0(0)	2(50)	0(0)	1(100)	0(0)
	11-20yrs	M	2(50)	19100)	0(0)	0(0)	1(100)	2(66.7)	2(66.7)	1(33.3)	0(00	1(100)	22(50)	2(50)	0
		F	2(50)	0(0)	0(0)	0(0)	0(0)	1(33.3)	1(33.3)	2(66.7)	1(100)	0(0)	2(50)	2(50)	0
	21-50yrs%	M	4(57.1)	4(40)	3(30)	2(33.3)	6(75)	4(80)	2(33.3)	4(66.7)	3(30)	33.3)	4(80)	6(60)	0(0)
		F	3(42.0)	6(60)	7(70)	4(66.7)	2(25)	1(20)	4(66.7)	2(33.3)	7(70)	4(66.7)	1(20)	4(40)	0(0)
	>50 yrs.%	M	0(0)	2(66.7)	0(0)	0(0)	0(0)	3(75)	0(0)	1(100)	0(0)	3(100)	0(0)	0(0)	0(0)
		F	1(100)	1(33.3)	0(0)	1(100)	0(0)	1(25)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
2005 E.C	65yrs%	M	0(0)	0(0)	1(100)	0(0)	6(54.5)	2(66.7)	1(33.3)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
		F	2(100)	1(100)	0(0)	0(0)	5(45.5)	1(33.3)	2(66.7)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	6-10yrs %	M	0(0)	3(75)	4(50)	6(60)	4(44.4)	1(33.3)	3(75)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
		F	2(100)	1(25)	4(50)	4(40)	5(55.6)	2(66.7)	1(25)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	11-20yrs%	M	7(70)	7(38.9)	10(52.6)	6(54.5)	13(52)	7(58.3)	9(50)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
		F	3(30)	11(61.1)	9(47.4)	5(45.6)	12(48)	5(41.7)	9(50)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	21-50yrs%	M	30(68.2)	20(43.5)	22(32.4)	31(60.8)	42(62.7)	21(44.7)	39(59)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
		F	14(31.8)	26(56.5)	20(47.6)	20(39.2)	25(37.3)	26(55.3)	27(41)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
	<50yrs%	M	5(71.4)	5(100)	5(35.6)	4(50)	2(100)	11(84.6)	4(100)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)
		F	2(28.6)	0(0)	4(44.4)	4(50)	0(0)	2(15.4)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)	0(0)

indices 56% males and 44% females are recorded. This shows that the previous study and the present study are comparably related to each other in view of their percentage and their ratio (Table, 1).

From the statistics result, the patient record from DOTS based on age group 21-50 yrs. were more infected in both male and females than age group ≤ 5yrs, 6-10yrs 11-20yrs and >50yrs. Age group 11-20yrs were more infected in both male and female than age group ≤ 5yrs, 6-10yrs and >50yrs. Age group >50yrs were more infected in both male and female than ≤ 5yrs and in male more infected than 6-10yrs but in female it was less infected than that of 6-10yrs. Age group ≤5yrs were the least infected in both male and female. The result indicates that males are more infected than female in all age group (Table 1).

Almost all foods are advisable to eat especially protein containing foods are more preferable such as legume plants and most animal products and uses of drink where non advisable drinks are alcohol and alcohol related drinks (www. Irsitbrd.nic.in).

CONCLUSION

Tuberculosis is a common disease in the world especially sub-Saharan Africa. This indicates that tuberculosis is prevalent in rural and urban area. The presence of mycobacterium tuberculosis in the city is an indication of the local transmission of the disease in Nekemte City. Therefore tuberculosis is an air born disease.

Mostly males are more susceptible than females. Based on age group 21-50yrs (productive population) are more infected than other age group.

About one third of the world's population is infected with mycobacterium tuberculosis. Among the communicable disease, TB is the second leading cause of death in the world after HIV/AIDS, killing nearly two million people each year. Approximately 13% of TB patient have coexistent

HIV infection.

RECOMMENDATION

Large and more compressive studies are recommended to reduce the prevalence of tuberculosis in Nekemte. It is also recommended that long term improvement, prevention and treatment of TB should be carried out.
Some drugs are suitable for tuberculosis reduction. Therefore patient takes BCG vaccination method properly.
The public should be made aware of the danger of tuberculosis: it should be sensitize of the spread, and method of control. Overcrowding should be avoided. Working and living condition should be improved. Isolation and treatment of infected individual is necessary. Milk and milk production should be pasteurized.

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