

Overview of Tuberculosis in Global Perspective (With Special Reference to India)

Abstract

Every year communicative disease like tuberculosis kills thousands of persons in India. India also records a large number of tuberculosis patients. Tuberculosis is communicative infectious disease which is directly affected by surrounding environment. In India due to rapid urbanization and industrialization leads spread of slump and crowded areas which in turn leads to increased number of tuberculosis patients in India. In this paper efforts are made to find out the present scenario and causes of increased number of tuberculosis in India.

Keywords: Tuberculosis, Infectious Disease, TB Mortality, Risk Factors.

Introduction

Tuberculosis (TB) is a very serious disease that mainly affects the lungs of human body. Tuberculosis virus borne disease and this disease spread from one person to another through small droplets released into the air by the coughs and sneezes by patient already suffering from tuberculosis. Many types of tuberculosis are resistant to the most widely used drugs to treat the disease. People with active TB are insisted to take prescribed medicines for regularly to eliminate the infection and prevent the development of the immune system. Although, persons of all ages are at risk of tuberculosis, but Tuberculosis affects adults in their most productive years.

Tuberculosis (TB) is a potentially serious infectious disease that mainly affects lungs. The bacteria that cause tuberculosis are spread from one person to another through tiny droplets released into the air via coughs and sneezes. Many strains of tuberculosis resist the drugs most used to treat the disease. People with active tuberculosis have to take several types of medications for many months to eradicate the infection and prevent development of antibiotic resistance. Tuberculosis mostly affects adults in their most productive years. However, all age groups are at risk.

India is prone to tuberculosis disease because in recent decades due to rapid industrialization and urbanization a large number of workers moved from rural to urban areas for employment which leads to spread of slump areas near such cities. The cities are becoming over-crowded and the environment becoming polluted. Due to environmental deterioration and unhygienic living environment tuberculosis spreads rapidly in India.

Tuberculosis causes several deaths all over the world. It is observed that over 95% of cases and deaths are in developing countries are marked with rapid urbanization and industrialization. In India also there is high mortality rate due to tuberculosis.

Objectives of the Study

The main objective of the paper are as follows:

1. To find out the present status of tuberculosis disease in the world as well as in India.
2. To evaluate present status of tuberculosis mortality in the world as well as in India.
3. To study various risk factors responsible for spread of tuberculosis in India.

Tuberculosis: Global Scenario

Tuberculosis is widespread infectious disease found in almost all parts of world and causes a significant number of deaths every year. At international level World Health Organization is making serous efforts to reduce the incidence of tuberculosis. Presently eradication of tuberculosis is one of important 'Sustainable Development Goals' of United Nations. United Nationals launched 'a very significant campaign "United to End TB:



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An Urgent Global Response to a Global Epidemic" and emphasized on need for immediate action to accelerate progress towards the goal of ending the TB epidemic by 2030. WHO collects tuberculosis data from all parts of world and published a global TB report every year since 1997.

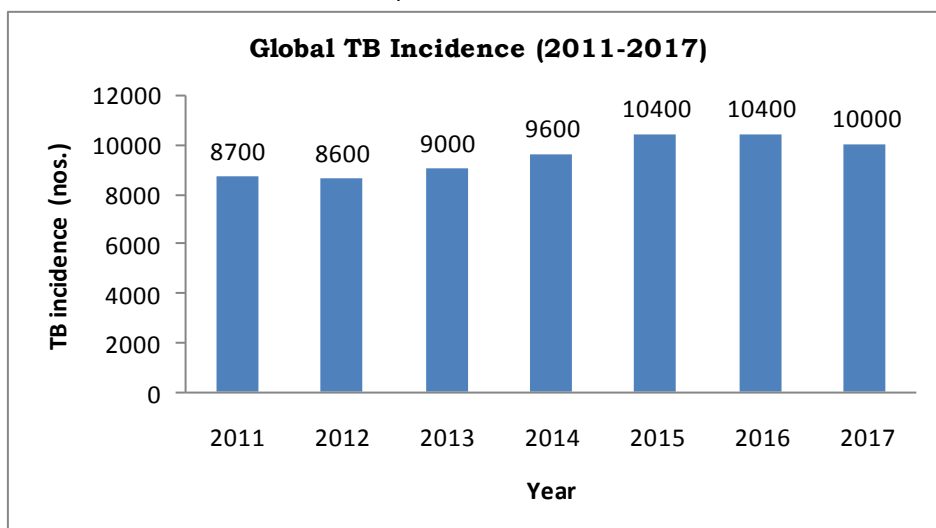
Global incidence of Tuberculosis

The global incidence of tuberculosis as estimated by World Health Organization (WHO) is shown in following table:

Table
Global incidence of Tuberculosis (2010-2017)
(No. 000')

Year	Population	TB incidence	% to population
2010	6869573	8800	0.128
2011	6947687	8700	0.125
2012	7053684	8600	0.122
2013	7135628	9000	0.126
2014	7239269	9600	0.133
2015	7320000	10400	0.142
2016	7440000	10400	0.140
2017	7520000	10000	0.133

Source : World Tuberculosis Report 2010-2017



Source: World Tuberculosis Report 2011-2017

The above table and graph shows that TB incidence showing increasing trend from 2010 to 2017 at global level and TB incidence increased from 88 lacs to 1 crore. The percent of TB incidence to total population was 0.128% in 2010 in India which shows increasing trend till 2015 then it shows slightly decreasing trend. But overall percent of TB incidence to total population increased from 0.128% to 0.133% which is not good sign. Though TB incidence shows increasing trend but the change in percent of TB incidence to total population is not very significant and then it remains almost at same level.

Tuberculosis India Scenario

In India tuberculosis is one of ancient disease and its occurrence and treatment is also mentioned in traditional medication systems like Ayurveda and Homeopathy literature. Significantly, large number of incidence and mortality of tuberculosis records in Asia WHO region and India is also part of this region. The rapid urbanization and

industrialization were main reasons responsible for spread of tuberculosis in India.

Efforts are regularly made by international and national agencies for complete eradication of tuberculosis and WHO is monitoring the status of this disease at constantly making efforts for its eradication. In India, efforts were started long back by government, but in recent time eradication of tuberculosis is one of major goal of the government. Various governments of along with other non-government organizations are making serious efforts for eradication of tuberculosis from time to time. Today, all medicines and tests for treatment of tuberculosis are free of cost sponsored by government and also government is providing nutrition and other facilities to TB patients under various programmes. NTPC uses the World Health Organisation (WHO) recommended Directly Observed Treatment Short Course (DOTS) strategy and

reaches over a billion people in 632 districts/reporting units.

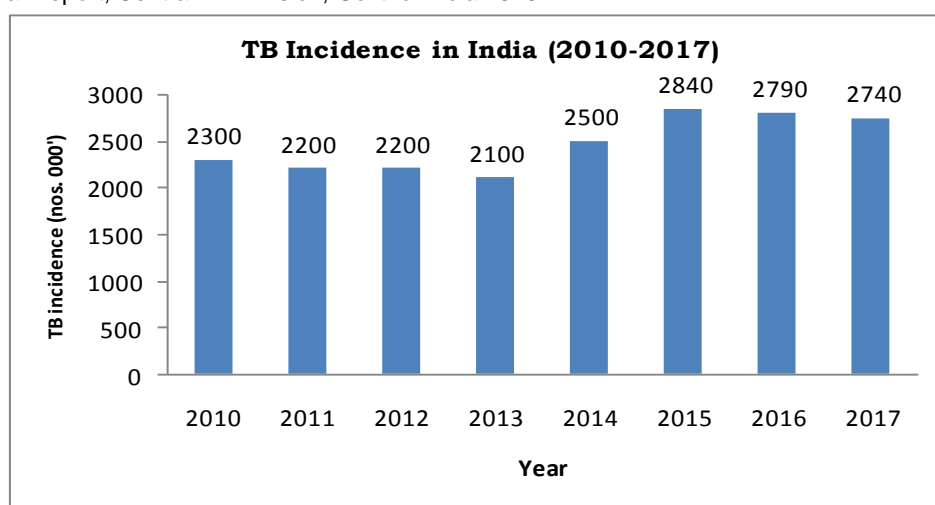
Indian incidence of tuberculosis

The Indian incidence of tuberculosis as estimated by World Health Organization (WHO) is shown in following table:

Table
Incidence of Tuberculosis in India (2010-2017)
(No. 000')

Year	Population	Total TB Incidence	% to total population	HIV+ incident TB cases
2010	1224614	2300	0.188	110
2011	1241492	2200	0.177	94
2012	1236687	2200	0.178	130
2013	1252140	2100	0.168	120
2014	1295292	2500	0.193	110
2015	1310000	2840	0.217	113
2016	1324000	2790	0.211	87
2017	1340000	2740	0.204	86

Source : Annual Report, Central TB Division, Govt. of India 2010-17



Source: Annual Report, Central TB Division, Govt. of India 2010-17

The above table and graph depicts that tuberculosis incidence in India first shows decreasing trend from 2010 to (23,00,000) to 2013 (21,00,000) and then it raises to 25,00,000 in 2014 and 28,00,000 in 2015 and then it shows slight decrease to 27,90,000 in 2016 and 27,40,000 in 2017. It is important to note that percent TB incidence to total population in India increased from 0.188% to 0.204% from 2010 to 2017. Although centre and state governments along with NGOs and other organizations constantly making their efforts to stop TB in India but due to rapid urbanization and industrialization percent TB incidence increased in last decade.

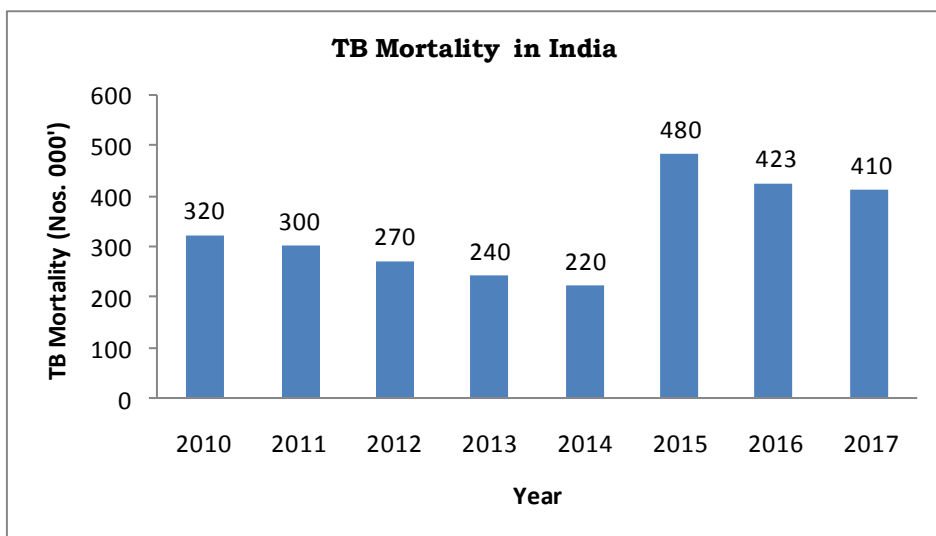
TB Mortality in India

Tuberculosis caused a significant number of deaths all over the world including India. Tuberculosis caused a significant number of deaths all over the world including India. TB mortality rate is high specially in developing countries. India is also developing country and TB mortality is comparatively high in India also. Eradication of TB is one of sustainable development goals and thus efforts are regularly made to total eradication TB. Due to combined efforts at all levels, TB mortality is declining but still there is significant number of TB mortality in India. The TB mortality in India is shown in following table

Table
TB Mortality in India (2010-2017)
(No. 000')

Year	Mortality	HIV+ TB mortality
2010	320	-
2011	300	-
2012	270	42
2013	240	38
2014	220	31
2015	480	37
2016	423	12
2017	410	11

Source: Annual Report, Central TB Division, Govt. of India 2010-17



Source: Annual Report, Central TB Division, Govt. of India 2010-17

The above table and graphs shows that TB mortality in India shows decreasing trend from 3,20,000 in 2010 to 2,20,000 in 2014 but it surprisingly significant increase 4,80,000 in 2015. Although TB mortality in India then shows decreasing trend in 2016 (4,23,000) and (4,10,000) in 2017 but it is still at high average and it is almost double then in

2014. The high mortality rate in India is very alarming situation and more serious efforts are needed at every level to eradicate TB from India.

Rate of Incidence and mortality per lac of population

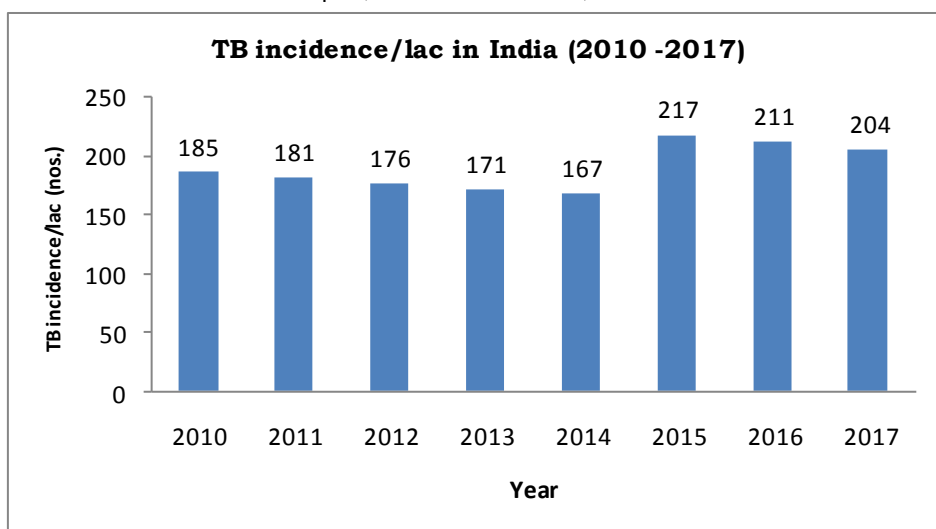
Rate of Incidence and mortality per lac of population in India is shown in following Table :

Table

Rate of Incidence and mortality per lac of population

Year	Incidence	Mortality
2010	185	26
2011	181	24
2012	176	22
2013	171	19
2014	167	17
2015	217	32
2016	211	32
2017	204	31

Source: Annual Report, Central TB Division, Govt. of India 2010-17



Source: Annual Report, Central TB Division, Govt. of India 2010-17

The per lac TB incidence and mortality in India shows similar trend as incidence and mortality in India. TB incidence and mortality per lac of population

in India first shows decreasing trend from 2010 to 2014 and then it surprisingly increased in 2015 then

although it shows decreasing trend in 2016 and 2017 but is still at high alarming situation.

Risk Factors for Increased Tb Patients in India

There are many factors which directly or indirectly leads to possibility of tuberculosis. Risk factors for TB include the following:

Low Socioeconomic Status

Peoples living in social-economic conditions are at higher risk to tuberculosis because of the fact that they are living in un-hygienic conditions. Due to low economic conditions peoples unable to pay the cost of medical tests and regular checkup thus infectious disease like tuberculosis cannot be detected at primary stage and at later stage of tuberculosis they cannot afford the treatment.

Crowded Living Conditions

Urban areas are often very crowded and peoples are living in un-hygienic conditions and also due to crowd there is more possibility of spreading of viral and bacterial diseases. In urban areas there is huge crowd on road, in transport and even at working place as well as in town and rural areas there is social gathering on many occasions like festival, melas, marriages etc. Presence of any TB infectious patient in such crowd may spread TB bacteria to other persons through air.

Alcoholism

Due to hard and tough labour persons become addicted to alcoholism which they become more prone to tuberculosis. Higher intake of alcohol badly affects important organs of human body like liver, diaphragm etc. and results in weaken the metabolism of the body.

Weak Immune System

Due to high cost of living and low income peoples are unable to fulfill their nutritional requirements. Large section of society is still living below poverty line. Due to low nutritional diet the immune system of peoples weakened and due to weak immune system chances of tuberculosis increased.

People with Other Medical Risk Factors

People with other medical risk factors such as diabetes and severe kidney disease are also at higher risk of tuberculosis.

Drugs

People who use intravenous drugs like smack, Afeem, heroine and other type of drugs are also at higher risk of tuberculosis as their lungs and other organ are badly affected by intake of drugs.

Children

Children are at higher risk for TB if they ever had contact with a person who has had TB infection.

Medical Staff

Medical and nursing staff serving in Chest Hospitals are at higher risk of tuberculosis. Proper precautions should be taken by serving staff at hospitals and negligence may lead to tuberculosis.

Conclusion

Tuberculosis is communicative disease which records thousands of deaths every year all over the world. India also records a high number of MDR TB patients due to over-crowded cities, un-hygienic living conditions and rising pollution. MDR TB kills thousands of lives every year. Efforts are needed to improve living conditions of people living in crowded or slump areas. Although, serious efforts are made at international and national level for complete eradication of tuberculosis, but still more efforts are needed.

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