Tobacco and Tuberculosis

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Abstract: **Tobacco smoking is one of major risk criteria for occurrence of tuberculosis (TB) for many years. But research on relationship between occurrences of TB due to tobacco but only recently is less consistent. Person prone to smoking is also prone to infection with TB which develop active disease and then may die due to TB. There is very study for relationship between number of cigarette smoked per day and risk of occurrence of TB.**

Keywords: **Tobacco, Tuberculosis, COPD, WHO.**

1. Introduction

Tuberculosis (TB) is a disease caused by Mycobacterium tuberculosis bacteria and involves lung infection. Most infections which occurred due to M. tuberculosis does not show any symptoms, and such type is called as latent tuberculosis or inactive tuberculosis. Active TB shows various infections. Very few cases of latent tuberculosis get converted into active tuberculosis. If such active cases of tuberculosis are not treated with proper medicines on appropriate time, then it may develop serious symptoms due to which patient may die. Major symptoms includes chronic cough with reddish mucus, fever, sweating during night, and reduction in body weight. It may include other organs and so that variety of symptoms start to appear [1].

Tuberculosis can be transmitted from one person to other person via air droplets of the person having active TB during coughing, sneezing, speaking or spitting. Patient having latent TB infection do not spread the disease by such means. There are more chances of occurrence of active TB in person with HIV/AIDS and those who are prone to smoking because of low immune power. Active TB can be identified or diagnosed using X-ray of chest and microscopical studies of sputum as well as by study of microbial culture of body fluids. Tuberculin skin test or blood tests can be used to diagnose latent TB [2].

Prevention of TB is most important and can be prevented testing persons at high risk, early detection of TB cases, early treatment with DOTS and vaccine such as Calmette-Guérin (BCG) vaccine can be given. High risk of TB mostly occur at household, workplace and socio-economic contact with active TB patients. Treatment of TB can be done with use of multiple antibiotics for a longer period of time but major problem arises is resistance to antibiotics and such TB is called as multi drug resistant TB (MDR-TB) [3].

Tuberculosis is a major cause of morbidity and mortality worldwide. In 2016, the number of people who developed active TB was 10.4 million and dies was 1.3 million. If we compare with other infectious disease death rate, this death rate is higher. Death rate is higher (98%) in low income countries and middle income countries. 88% of active TB occurs in high burden countries. The closure of TB with non-communicable diseases and tobacco consumption hampered the development of end TB strategy and sustainable development goals. Hence it showed to modify the established approached and design of TB control [4].

The risk of development of active TB doubles in tobacco smokers as compared to tobacco non-smokers. It should be noted that death rate due to TB is double in tobacco smokers as compared to tobacco non-smokers. About 82% of people live in low and middle income countries and amongst them about 1 billion people smoke tobacco. Due to this major portion of morbidity and mortality occurs in low and middle income countries due to use or smoke of tobacco by subsequent development of TB. Secondly very limited health facilities are available for managing this costly disease. But if appropriate education about role of smoking in TB disease and TB deaths can have impact on development of TB due to smoking in low and middle income countries. Use of tobacco in low and middle income countries is higher due poor tobacco control policies while use of tobacco in high income countries is lower due better tobacco control policies. It is also true that prohibition of smoking how much helps to reduce development of TB. In an average 11 million cases of TB develops, out of which 95% TB cases incudes 80% of tobacco users which shows that smoking doubles the risk of TB and TB mortality [5].

WHO global TB health report and tobacco consumption surveillance report provides TB incidences, TB mortality and smoking pattern as per the country situated. Published data provides the risk factors and ratio regarding effect of smoking on TB cases and TB mortality due to smoking. Due to smoking, 18 % of TB cases and 16 % of TB mortality has been reported annually. 31% cases of TB and 29% deaths due to TB are reported in Russia and it is highest one. If we compare men and women smoking scenario, men are more prone for TB as compared to women. This indicates that there is a need to enhance the control over smoking by men [6].

Due to development of more sophisticated techniques for control of TB by Govt. And because of this TB burden has been reduced and also incidences of TB cases and deaths due to TB has been reduced. In recent years, percentage of new and relapsed TB cases are reduced to 75%. India was having highest burden of MDR-TB but due to improved treatment criteria, the

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annual global burden has been reduced [7]. India has second ranking in TB infections which are associated with HIV infection. In 1993, Revised National Tuberculosis Control Program (RNTCP) was introduced by World Health Organization (WHO) and for last 28 years it consistently working towards achieving its goal. RNTCP has treated many TB patients and so that it has been acknowledged as major and speedily spreading TB control program in the world. RNTCP program assist with free testing facilities for patients and TB suspects which includes MDR-TB, childhood TB, HIV-TB and extrapulmonary TB [8]. It also provides free quality assured treatment and services through a network. They also revise their treatment criteria and strategies as per current evidences and need. Some new introduction includes addition of new drug for treating TB such as Bedaquiline, extension of single window delivery of HUV-TB services at all centres of antiretroviral hubs, mobile apps based support system for treatment compliance for HIV-TB patients and implementation of E-NIKSHAY for improved coverage of TB cases from integrated tobacco and tuberculosis control programs in India. [9]. The program was scrutinized based on the PRAGATI platform by the Prime Minister's Office, depicting government's commitment toward TB control work. Furthermore, the program has developed its National Strategic Plan (2017–25) for TB elimination in India by 2025, ahead of the Sustainable Development Goals (SDGs). In addition, a targeted approach for 100 high priority districts as per caseload of TB, comorbidity, drug resistance, and case identification efforts have been planned to intensify the TB control efforts [10].

2. Conclusion

The relation between smoking and TB disease appears to be causal. Tobacco consumption can have most important impact on many aspects of tuberculosis. TB can be controlled if doctors, nurses and health professionals counsels the tobacco consumer regarding hazards of smoking for TB. Globally smoking became a fashion and life style and hence TB increasing accordingly which damages the respiratory system and thereby reduces immunity by interacting at cellular level. Passive as well as active smoking is involved in TB infection and developing TB disease. It can be concluded that cigarette smokers concurrently develop TB infection as compared to ex-smokers and non-smokers and also died within few days follow up period.

References

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