

Review Article

Role of tobacco in pandemic COVID-19 in India

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ABSTRACT

Since the end of 2019, the world has witnessed the spread of a COVID-19, that affects the respiratory system of the body in the form of the novel coronavirus. This pandemic has affected people across all socioeconomic demographics and cultures in high-, middle- and low- income countries. Tobacco is also a major risk factor for many diseases like cardiovascular disease, cancer, respiratory disease and diabetes which put people with these conditions at higher risk for developing severe illness when affected by COVID-19. Minimizing the use of tobacco and smoking might be an important factor for containing COVID-19 infection. On the other side, studies also suggest also that smoking is associated with a decreased risk of hospital admission with a diagnosis of COVID-19, or a decreased risk of occurrence of the disease in the community. These studies have noted 4 to 5 times lower proportions of smokers among patients hospitalized for COVID-19 compared with the underlying source population. A metanalysis of hospital case series confirmed this gap.

Keywords: COVID-19, Pandemic, Tobacco, Smoking

INTRODUCTION

The pandemic of COVID-19 is still under rapid progression; identification of prognostic factors remains a global challenge. COVID-19, also known as coronavirus disease or novel corona virus, is caused by severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) that causes respiratory illness. This may lead to inflammation and the build-up of mucus and fluids in the airway of the lungs and cause pneumonia.¹

COVID-19 pandemic is progressing with high pace, still there is lack of clinical characteristics of the patients and their prognostic factors.² Tobacco use might be possibly associated with adverse effects in disease prognosis, as many research projects have noticed the reverse impact of tobacco use on lung health and its association with an abundance of respiratory diseases.³ As we know, smoking is already known as a risk factor for many respiratory infections, such as colds, pneumonia, influenza, and

tuberculosis, according to the report by the surgeon general, Atlanta, 2014.⁴⁻¹² Cigarette smoking acts as a risk factor for the evolution of chronic obstructive pulmonary disease (COPD), distinguished by airflow limitation. In the lungs of smokers, inflammatory response is evoked by tobacco smoking. Immune system is impaired by smoking and it nearly doubles tuberculosis infection risk. Macrophages and cytokine response is affected by smoking which causes decreased ability to contain infection. There are about 5 times high chance to contract influenza by smokers as compared to non-smokers. The effects of smoking tobacco on the respiratory system of body, makes it more likely to smokers contracting respiratory diseases, that can be more severe. Increased morbidity and mortality from influenza and pneumonia are associated with smoking and usually smokers' contract more and severe cold.¹³ Smoking is also associated with increased risk of occurrence of acute respiratory distress syndrome (ARDS), a key factor for severe cases of COVID-19.¹⁴⁻¹⁷

Meta-analysis of 11,590 COVID-19 patients reported that 18.4% (2133) had disease progression and out of these, 6.3% (731) patients had smoking history. There is an association between COVID-19 progression and smoking (OR 1.91, CI- 95%, $p=0.001$). Angiotensin converting enzyme 2 (ACE-2) expression is high in current smokers as compared to non-smokers and previous smokers. Increased vulnerability to infection might be because of ACE-2 receptor upregulation as it is the main receptor used by SARS CoV-2 for entry in the host mucosa, leading to infection.

The other product that could be attributed to the spread of viral and bacterial diseases, with making people more susceptible to COVID-19, is chewing tobacco or smokeless tobacco. The WHO has emphasized that COVID-19 could spread through small droplets from the mouth or nose. These droplets are dispersed when an infected person exhales or coughs. These droplets stick on objects and can survive for few hours or may be up to several days. Other people can be infected by touching these objects or surfaces followed by touching their eyes, nose or mouth.

Approximately 90% of smokeless tobacco chewers live in Asia, India remains the world's biggest market of smokeless/chewing tobacco products which is taxed at a low rate and carries a substantially higher health risk. Smokeless tobacco, areca nut, pan, gutka, khainni, and zarda increases the production of saliva followed by a very strong urge to spit. Most of chewers hold the quid in their mouth for a period of time and then spit out the tobacco juice along with their saliva. With lax laws and enforcement coupled with poor infrastructure, "spitting" is most often done in open public places, rendering the rest of the community at risk of a range of communicable diseases. Spitting can cause the spread of COVID-19 as the saliva of an infected person can carry the virus for more than 24 hours.¹⁸⁻²⁶

Aims

Aims of the study were: highlight the magnitude of tobacco use in India, and to study the health consequences associated with tobacco on COVID-19.

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DISCUSSION

Control of tobacco use might be an important for reducing the risk of the transmission of the virus that causes COVID-19. It is important that the control of tobacco use should be taken seriously especially at this time and within a comprehensive approach to control all tobacco use, in light of the World Health Organization framework

convention on tobacco control (WHO FCTC) obligations and MPOWER recommendations. The range of tobacco forms which are in current use can facilitate exposure to COVID-19 within or even between communities. This is of an important concern for countries with high population densities. In the early 20th century, government had imposed many laws to stop spitting in public areas, due to concerns about the spread of diphtheria, tuberculosis, pneumonia and influenza. Today, the spread of these diseases has been controlled with widespread education campaigns. Now we have a similar situation with COVID-19 and tobacco chewers. Restricting the use of these substances in public places would likely contribute to reduction in the transmission of COVID-19. This may be achieved by ban on the sale of all forms of tobacco to mitigate COVID-19 spread and raising taxes on tobacco products.²⁷⁻²⁸

CONCLUSION

Public health advocates in India are now pushing other states to ban smokeless tobacco to stop the spread of COVID-19. However, it is essential to act quickly, because—like containing COVID-19—delaying decisive action will cost many lives.

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