Poor Lung Hygiene in Kashmiri Population as Increased Risk Factor in Aggravating COVID-19 Disease Condition

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ABSTRACT
COVID-19 pandemic has put the whole world in cauldron as almost each and every nation is affected by this deadly virus. Intense research is going on world over to demystify the microscopic involvements of this virus, how and whom it infects and in devising out a suitable treatment strategy in containing this pandemic. Till now there is no suitable therapeutic strategy available yet and people are advised to maintain social distancing protocols to protect themselves from contracting this disease. If we talk of symptoms, there are new things coming to fore what was initially thought out with new classes of symptoms continuously added to the already existing list and presumed to be directly aggravated on contracting COVID infection. Among various other factors that greatly increase the chances of getting infected and in aggravating the symptoms in COVID-19, poor lung health among elderly population has been found to significantly increase the chances of contracting the viral disease, exacerbating the disease condition & in poor prognosis to available treatment strategies. Hookah smoking is very common among majority of elderly population in Kashmir & cigarette smoking in younger lots could turn out devastating if the world pandemic takes an epidemic shape in Kashmir region. With high prevalence of other comorbid conditions like hypertension, type 2 diabetes, obesity and in conjunction with above nominal prevalence of cigarette and hookah smoking. Majority of both elderly and younger Kashmiri population could contract the disease and show severe symptoms owing to the factors discussed. Here, we summarize the prevalence of hookah smoking among majority of population in Kashmir and the associated lung diseases that are directly or indirectly attributed to high cigarette or hookah smoking in Kashmir and how it could act as high risk factor in COVID pandemic infection.

Keywords- Poor Lung Hygiene, Kashmiri Population, COVID-19, Hookah Smoking, Comorbid Conditions

I. INTRODUCTION
Cigarette smoking remains a widespread practice throughout the world despite of its various ill effects. Many studies have shown a strong association between cigarette smoking and chronic obstructive lung disease and associated mechanisms has been elucidated only recently. The mortality rate for lung cancer continues to increase and compelling evidences associate lung cancer with cigarette smoking but has not been replicated in animal models as yet [1]. There is high prevalence of Hookah/cigarette smoking among majority of Kashmiri population both in elders as well as in younger age groups and it is believed that almost everyone’s grandfather starts his day with hookah smoking in Kashmir. It is not a new normal, but exists in Kashmir since times immemorial. Majority of elderly population in Kashmir suffers from metabolic disorders including obesity, cardiovascular problems and diabetes among various others that put them at greater risk in developing other associated comorbidities. Surprising is the fact that prevalence of metabolic syndrome in 8-18-year-old school-going children of Srinagar city in Kashmir India has been reported in one study [2, 3]. Majority of population including both elderly & younger ones are greatly addicted to cigarette smoking including the cultural hookah smoking in Kashmir. Smoking of any form significantly reduces the lung hygiene, immunity & puts one at a greater risk of developing cancer & other infective disorders [4]. This might be the best time for smokers to try and quit or cut down smoking, because the World Health Organisation (WHO) suspect positive correlation of smoking and contracting COVID-19 disease and that people with smoking habits are prone to corona virus infection and in displaying more severe symptoms on contracting the disease[5,6] and the reason is simple- smoking cigarettes or vaping affects one's
lungs, thereby increasing the chances of a smoker developing serious condition on contracting the infection [7].

II. SMOKING AND LUNG DISEASES: CURRENT UNDERSTANDING OF THE ASSOCIATION

The WHO, in its FAQ’s section on corona virus infection have put forth that smokers are likely to be more vulnerable to COVID-19 as the act of smoking greatly increases the possibility of transmission of the virus from hand to mouth and afterwards when a person touches anything that later on comes in contact to other uninfected person [8]. Moreover, as it is already know that smoking reduces the lung function or reduce the lung capacity, increases the inflammatory markers which would greatly increase the risk of serious illnesses & hence the chances of getting infections as in the present case corona virus becomes more complicated [9]. So, in cases where people are infected with the corona virus, the chances of those with a history of smoking or an existing habit may lead to the development of a severe infection & may be the reason why there is both high contraction & high mortality rate among elderly population world over [10]. Furthermore, the oxygen exchange alveolar cells in the lungs of smokers are already damaged to quite an extent, depending on the degree and frequency of their smoking habit, making them more predisposed at developing more severe symptoms on getting infected to COVID-19 [11].

As per Quit, a cancer program run by the Cancer Council Victoria in association with the Australian Department of Health, state that smokers are generally at higher risk of respiratory tract infections, like lung and chest infections [12], but there are currently no evidence based studies conducted yet to make any solid claim & more studies are required to establish & to be certain that people who smoke are at higher risk of getting infected to corona virus (COVID-19) [13]. However, it is a concluding fact that people with poor lung function as a result of smoking or from anything else, may be at higher risk of complications if they do turn infected with the virus. Furthermore, Dr. Stanton A Glantz, Professor of Medicine at the Center for Tobacco Control Research and Education, quotes in an article in the Scientific American, that stopping smoking in the current circumstances while also avoiding secondhand exposures would be a sensible thing to do as we don’t have much details available yet how the pre-dated exposure to smoking greatly impacting the respiratory health could be contributing in disease contraction & poor prognosis [14, 15]. Hypotheses and associations are being drawn between the infections and smoking, it is important that there is no evidence yet that points to causation. This means that while smoking may act as a risk factor or increase the chances of a COVID-19 patient developing a severe infection, but given the fact that there is no established cause and effect relationship between the two, we can predict on theoretical considerations that smoking may have an impact in pushing it further, the COVID-19 disease. As we know that more severe covid-19 infections often feature pneumonia, an infection in the lungs causing swelling and sometimes difficulty breathing and some of the cases even worsen further and produce acute respiratory distress syndrome (ARDS) in which fluid in the lungs blocks breathing, requiring intensive care and sometimes leading to death [16]. Earlier research in this line has shown that smokers tend to be more prone to pneumonia, including its most severe and deadly forms [17]. There is also fairly strong evidence that air pollution increases the risk of acute low respiratory infections [18] and is thought of that it may have contributed to the extent of the outbreak in Wuhan & this potential link between air quality in Wuhan and the novel corona virus outbreak requires further studies to establish the fact [19]. As of now, we can predict on theoretical considerations that there may be both short term & long term effects associated with smoking that could be negatively affecting the treatment prognosis of patients contracting COVID-19 infection as well as the differential contraction of disease among younger & elderly population given the fact that elderly population is associated with other long term comorbid disease conditions including metabolic syndrome among others. Similarly, smoking leads to heart and lung disease, which also leaves one predisposed towards worse covid-19 outcomes but doesn’t establish directly that smoking/air pollution worsens COVID-19 and would need to be evaluated in further studies [20].

III. HOOKAH/CIGARETTE SMOKING IN KASHMIR AND LUNG DISEASES; A CRITICAL REVIEW

Taking curious case of Kashmiris, it is a well established fact that hookah smoking among elderly population is all time high in Kashmir & cigarette smoking among younger population is even higher than the national average. Previous studies conducted have shown that about a sixth of the population aged 74 years in Kashmir has Stage I or higher chronic airflow limitation (CAL), but that only 0.73% report doctor-diagnosed COPD, (Chronic Obstructive Pulmonary Disorder). Further, previous peak flow meter-based survey reported a prevalence of chronic bronchitis in Kashmir of 7.7%, with higher prevalence among smokers and those living in poorly ventilated houses. The single most important cause of airflow obstruction has been reported to be mostly due to smoking, particularly due to traditional hookah smoking among the older population. It has also been reported earlier that hookah smoking confers a higher risk of lung cancer compared to cigarette smoking and may act as an important contributory factor.

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in causing Chronic airflow limitation as well [21]. These earlier studies conducted so far with regard to assessing the poor lung health among elderly population in Kashmir addicted to hookah smoking has revealed interesting facts that majority of the population in Kashmir are used to Hookah smoking more so, our elderly population. The lung hygiene among the same population group concerned is very poor & most are suffering due to chronic airflow limitation that ultimately lead to chronic obstructive pulmonary disorder & thereby reducing the functional capacity of lungs. Now given the facts revealed from preliminary studies conducted so far viz a viz COVID-19 pandemic and as released by WHO from time to time, it is deemed to say that poor lung hygiene on account of cigarette smoking can exacerbate the disease symptoms in elderly’s and can put them at higher risks of contracting the infection as per the other investigative paper citing higher expression of ACE2 receptors in patients addicted to smoking [22].

IV. HOOKAH/CIGARETTE SMOKING AS INCREASED RISK FACTOR IN AGGRAVATING COVID-19 SYMPTOMS IN KASHMIRI POPULATION

Since the corona virus epidemic has swirled across globe and people with poor lung hygiene representing the majority of elderly population in any population group have been found to be more predisposed at contracting corona virus disease and are also found to develop more severe pneumonic symptoms that has greatly contributed in increasing the mortality rate among elderly population. As majority of our population in Kashmir falls in the senior age group and as most of them are addicted to hookah smoking presents a grim picture that most of our elderly population could be affected by the corona virus disease & may present more severe symptoms on contracting the infection. It may also slightly change the mortality curve if we consider the prevalence of hookah smoking in Kashmir and its positive correlation with corona virus mortality rate as predicted from preliminary findings. Even the younger population falling in the age group of 15-45 is highly addicted to cigarette smoking and could also display more intense COVID symptoms on contracting infection and can even shift the mortality curve to worse. Before we see anything like that in Kashmir if it takes an epidemic shape & in absence of any scientific proof available yet regarding the correlation of smoking & contracting corona virus disease among elderly’s. It is imperative that the people from the region strictly adhere to health advisories issued time to time by WHO as well as by the local healthcare authorities to reduce the chances of infection. It is clear to a certain degree that previous active history of smoking greatly impacts the disease outcomes. What can be done right now is to avoid rush, avoid gatherings, stay indoors, so that anything worst can be prevented from happening in absence of any well off healthcare facilities available at the disposal of people from Kashmir.

P. S.: This is a theoretical prediction based on key scientific findings available on the subject; original facts may be different as things unfold in the times to come.

V. CONCLUSION

Above lines of evidence viz a viz cigarette and hookah smoking in Kashmir and its positive correlation with increased incidence of poor lung hygiene suggests that majority of the population both from younger and senior age groups can contract COVID infection and could display more aggravating symptoms on contracting infection owing to the fact that there has been found increased prevalence of ACE2 expression in lung epithelia of COVID patients addicted to smoking to which the corona virus binds and acts as receptor for its entry into host.

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