Climate Change and Air Pollution Effects on Respiratory Allergies

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Editorial

Large changes in the atmosphere and climate, particularly anthropogenic-caused global warming, have an impact on the biosphere and human environment, according to a growing body of research. Epidemiological and experimental studies on the relationship between allergic respiratory diseases, asthma, and environmental factors such as climatic variables, airborne allergens, and air pollution have contributed to current knowledge of the effects of climate change on respiratory allergies. Most industrialised countries' increased prevalence of respiratory allergy problems and bronchial asthma has been linked to urbanisation, with its high levels of automotive pollution, and a westernised lifestyle. Assessing the effects of climate change and air pollution, on the other hand, is a difficult task. on the incidence of asthma in the general population and the onset of symptoms despite the fact that asthma exacerbations are common, they are difficult to manage. Asthma prevalence and severity may have increased as a result of this air pollution and global warming Because allergens in the air pollutants in the atmosphere are typically increased at the same time enhanced IgE-mediated response to aeroallergens at the same time increased airway inflammation could be to blame for the increase atopic people have a higher incidence of respiratory allergies and asthma than non-atopic people. The previous five decades the connection between air pollution and respiratory problems. allergies, such as rhinitis and bronchial asthma, are common. pollen allergies has been extensively researched. As a result of the huge increase in emissions of air pollutants produced by economic and industrial progress over the last century, air quality has become a major worry in many industrialised countries, as well as a growing problem for the rest of the globe. Increased quantities of greenhouse gases in the atmosphere, notably CO_2, have already greatly warmed the earth, resulting in more severe and prolonged heat waves, temperature unpredictability, air pollution, forest fires, droughts, and floods, all of which pose a threat to respiratory health. Although the impact of weather and environment variables on other coronaviruses or influenza virus has been documented in the past, it may be difficult to detect during the first pandemic wave, when many measures were put in place.

Containment measures were found to have a much bigger impact in studies than weather and climate variables, which account for only 18% of the variation in COVID-19 doubling time. Human mobility and the impact of imported cases are two other crucial variables for COVID-19 transmission, as demonstrated in various studies investigating the impact of climate on SARS-CoV_2 transmission. COVID-19 transmission could be hampered by air pollution. Two crucial criteria linked with virus transmissibility are the velocity of air changes in a location and the amount of ventilation. Ventilation is limited in high-population, high-building-density areas, and specific solutions are required to improve public health. Despite the fact that air pollution is likely to have an impact on the COVID-19 case fatality rate, further research is needed to draw conclusions about the impact of these variables on COVID-19 due to various limitations in previous studies.

Climate and air quality changes have been shown to have an impact on respiratory illness morbidity and death. During the past five decades, increased greenhouse gas emissions resulted in a considerable rise in global earth temperature. Anthropogenic-derived greenhouse gas emissions have a variety of consequences, including climate change and public health concerns. More study is needed, especially in the absence of public health activities, to correctly estimate the impact of weather and climate variables on the COVID-19 transmission rate and the resulting number of cases. According to the Intergovernmental Panel on Climate Change's Working Group I Report, "much of the observed increase in globally averaged temperatures since the mid-20th century is very likely related to the observed increase in anthropogenic greenhouse gas concentrations." Changes in precipitation amount, intensity, frequency, and type are also happening, as are increases in severe events including heat waves, droughts, floods, thunderstorms, and hurricanes, all of which are serious and scary threats.

The European Respiratory Society (ERS) has adopted a position statement on climate change and health implications following a session co-organized by the HENVINET Project and the American Thoracic Society. The position statement emphasises climate-related health effects such as heat-related deaths and acute morbidity; increased frequency of acute cardio-respiratory events due to higher groundlevel ozone concentrations; changes in the frequency of respiratory diseases due to trans boundary particle pollution; and altered spatial and temporal distribution of allergens (pollens, moulds, and other allergens) due to trans boundary particle pollution.