

EDITORIAL

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Global warming and allergy

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Full Text

Global warming is the latest threat to the health all around the world. It effects normal persons and more to those already having disease. The impact of global warming, meaning warmer environment, effects more the respiratory system, especially those having chronic lung diseases, such as chronic obstructive pulmonary disease, interstitial lung disease, asthma, allergies. There is an increase in the frequency and severity of allergic diseases, leading to more hospital visits and admissions. The acute episodes last longer and the response to treatment is slow because of persistent effect of global warming. This has led to the school-going children, without family history of allergy, to show signs of asthma-like pattern at very young age.

Asthmatics have more chances of exposure to risk factors due to prolonged warmer climate and also increase in air pollution. The ground-level ozone, a hazardous substance for respiratory system, which is created by chemical reactions between nitrogen oxide and organic compound, especially when exposed to sunlight in hot sunny days. Thus, during warmer sunny days, it increases. Global warming is increasing the temperature and prolong sunny days. This leads to longer pollen season as they bloom early and persist longer due to warmer temperature and producing prolonged pollen allergy season. It also leads to increase in carbon dioxide (CO₂) emission from the plants and increase in greenhouse gas emission (CO₂ and methane), leading to increase in potency and number of pollens. All the above lead to worsening of respiratory health.

The Environmental Protection Agency and the Asthma and Allergy Foundation of America along with other likeminded agencies suggested permissible range of air quality index (AQI) in the countries. The AQI is calculated using five major air pollutants: ground-level ozone, particulate matters, carbon monoxide level, sulfur dioxide level, and nitrogen dioxide level. EPA did set up the permissible limits as follows:

AQI

0–50 Satisfactory 51–100 Acceptable 101–150 Unhealthy for sensitive/risk groups 151–300 Very unhealthy >301 Hazardous.

Centers for Disease Control (CDC), Atlanta, USA, says that in general, the climate change due to global warming will effect air pollution, vector borne diseases, allergies, allergen, water quality and food supply, environmental deterioration, extreme heat, and severe weather.

As far as allergy is concerned, the longer hot season leading to longer period of exposure to allergen, especially pollen and changes in the level of ozone and levels of other noxious gases, leads to more frequent episodes and more severe allergy.

The smaller pollen and other allergenic particles might be carried with environmental pollutants of smaller size, like diesel fumes, go in the lung to the deeper or peripheral part and has been suspected to provoke asthmatic response in otherwise nonasthmatics persons. Smaller particulate matter also plays a similar role.

To counterattack the menace produced by global warming, stop the use of coal, stop burning of smoke-producing material of vegetable and other origin, use of alternative sources of energy like solar panel, shifting of polluting industries to periphery of township, shift cars/trucks from petrol/diesel to compressed natural gas/electrical fuel, and plantation of more trees are recommended. Plants/trees producing more oxygen such as Pipal, Tulsi, and Money plant may be beneficial. Use of wet face masks during high AQI period is recommended, if unable to stay indoor, and required to go outdoor for work.

It is suggested that travel plan, especially for those at risk, should move after getting the AQI level in that area normalize, and should stay indoor during high AQI level.

These measures may take many years to show the results, but will definitely benefit the risk groups and provide better environment for the next generation.

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