

The threat of air pollution in Asia.

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Chronic Obstructive Pulmonary Disease (COPD) is a serious respiratory disease which involves lungs and respiratory tract, exerts both chronic and acute symptoms like emphysema and chronic bronchitis resulting into the respiratory distress. This change in the respiratory tract and lungs is caused by the inhalation of polluted air from the environment. The prolonged respiratory distress often leads to the chronic asthma which is one of the common chronic respiratory diseases across the world. Although most of the cases of asthma and COPD can be well treated or managed with affordable medical interventions, but people often go undiagnosed and hence, left undertreated. In a recent study, it shows the number of deaths from respiratory diseases has increased by 11.6% between 1990 and 2015.

According to a report, India alone holds the quarter of deaths globally caused by the COPD and asthma. The study further reveals that more than 3.2 million deaths caused in 2015 by chronic obstructive pulmonary disease out of which 0.8 million occurred in India. Patients of asthma died 0.4 million worldwide and 0.1 million were in India, according to the study.

In India, the increasing number of vehicles plays the significant role in polluting the air. In the northern part of this country where experiencing much cold in the winter and thereby a thick dense invisible fog suspended in the atmosphere near the earth surface that doesn't allow the polluted air to go up. This situation in the environment increases threefold rise in the number of patients who suffer from the respiratory diseases, between October and February or at the onset of winter. The air becomes so polluted that symptoms of few patients go severe and that they need strong medical attention in a hospital care infrastructure. The appearance of symptoms rise in numbers and aggravates because the temperatures fall down resulting into thickening of air and concentrated levels of air pollution reaches the lower atmosphere, the area touches the large human population where people like new born, children, the elderly, pregnant women breath. Patients who have other chronic diseases like diabetes, hypertension and cardiac disorders, undergo regular medical care are at a higher risk to develop complications due to air pollution. The rising number of automobiles everyday in the metropolitan cities of India and South East Asia posing a threat and a good concern to the environmental scientists. The burning of petrol and diesel emits toxic air pollutants like formaldehyde, benzene, acrolein 1, 3-butadiene and polycyclic aromatic hydrocarbons (PAH). These when crosses the optimal level in the air result the health issues, like acute and chronic respiratory problems that may lead to lung cancers. A report from the World Health Organization (WHO) shows that around 1.34 million premature deaths from respiratory diseases and related cancers were caused due to the presence of such compounds in the air in 2008.

One of the major causes of asthma is the PM10 particles, the

particles of 10 micrometers or less in size and can penetrate into the lung parenchyma which in turn enters into the bloodstream, causing serious lung cancer, lower respiratory tract infections, asthma even heart diseases.

Ozone (O₃), an ingredient of smog, is another potential and highly reactive and unstable gas damages the inner lining of the respiratory tract thereby producing symptoms like shortness of breath, pain in the chest, hoarseness, wheezing, coughing, lung inflammation and exacerbation of respiratory illnesses such as asthma and pneumonia. A report reveals that approximately more than 14 million people died as a result of exposure to ozone in 2010. This is an increase of 6% since 1990.

Nitrogen oxides (NOX) is produced from the combustion of fossil fuel and prolonged exposure may leads into chronic respiratory diseases.

The combustion of sulfur-based coal and oil produces Sulfur dioxide (SO₂) which when mixed with water forms Sulfuric acid causes the acid rain. SO₂ causes the cardiac diseases and serious respiratory disorders.

The fuel combustion of boilers produces carbon monoxide (CO) which is also emitted by vehicles influences cognitive functions, visual impairment. Even high levels CO in the blood may results unconsciousness and eventually death.

Prevention

First of all people should be aware of the causes that pollute air. In order to minimize the levels of air pollution the cutting of trees or its branches should be stopped. More and more plantation of the trees are to be made. The photosynthesis performed by plants adds oxygen to the atmosphere, made available the fresh air we breathe. Trees also provide shade during the hot summer days in Asian countries. There are other modes of course by regulating the use of vehicles.

Treatment

There are standard conventional medicines to treat the respiratory tract infection. However, there may be some undesired effects to appear if used frequently with the infection. Traditional medicine also reduces the symptoms of upper respiratory tract infection successfully. Children and pregnant women are safe to take alternative medicines with the advice from the doctor.

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