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Free with The Telegraph CALCUTTA MONDAY 21 OCTOBER 2013 XXCE

Call to fight cancer in air

GAUTAM MUKHOPADHYAY

India is on course to becoming the 'cancer capital' of the world by 2020. The cancer burden has increased by leaps and bounds in the past two decades. More than 10 lakh new cases are reported annually in India with Bengal alone reporting more than 80,000. Tobacco is linked with more than half of the cases and pollution seems to be catching up very fast.

At any point of time there are more than three lakh cancer patients in Bengal. The increasing magnitude of this problem needs to be addressed quickly as by 2020 every family is estimated to have at least one cancer patient.

Air carcinogen

About one fourth of lung cancers are not tobacco related, they are most probably related to air pollution.

Air pollution has now been added as a Group I carcinogen (agents causing cancer) along with tobacco and ultra-violet (UV) radiation. Pollution is associated with lung cancer and also of head and neck like oral, voice box (larynx) and pharyngeal cancers.

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Air pollutants are now considered carcinogens equivalent to tobacco smoke. Vehicle emissions like diesel engine exhaust, burnt coal of power plants, industrial and agricultural emissions produce particulate matter which can cause lung cancer.

Studies suggest that public transport like buses and autos account for about 70 per cent of vehicular pollution in Calcutta.

Chemical carcinogen

There are many chemical agents which cause cancer. Lung cancer is associated with tobacco smoke, asbestos, arsenic, silica, coal tar, chromium, nickel and other compounds. Cancer of the oral cavity is associated with tobacco smoke and alcoholic beverages; gastric cancers to smoked, salted and pickled foods. Liver cancer is associated with aflatoxins, alcohol and vinyl chloride.

UV light

Like tobacco and air pollution, UV light is also considered a Group I carcinogen. UV light is categorised as UVA, UVB and UVC radiation depending on wavelength. UVC is most carcinogenic but fortunately it is absorbed by the ozone layer of the atmosphere. UVA and UVB can cause skin cancer depending on exposure.

Tobacco smoke

Pollution caused by tobacco smoke is still the most important cause of cancer other than the genetic factor. *Bidi*s contain high tar and nicotine which are carcinogenic. Cigarette contains the same but in lesser amounts. The smoke emitted contains toxic chemicals like hydrogen cyanide, carbon monoxide and complex hydrocarbons which are lethal. Tobacco smoke contains almost 60 carcinogens which are responsible for cancer.

Passive smoking or second-hand smoking is a combination of two types of smoke. Sidestream smoke or smoke emitted between puffs of burning cigarette and mainstream smoke or smoke exhaled by the smoker. Both contain carcinogens.

Time to act

The directives of the World Health Organization (WHO) and Tata Memorial Hospital (TMH) Mumbai need to be implemented with utmost priority. Rapid increase in the number of cases in the past few years is probably related to our lifestyle and pollution. We need to avoid tobacco, reduce pollution and change our lifestyle to keep cancer at bay. The present decade is crucial and it is time we deliver.