

AIR POLLUTION AND GENETIC FACTORS LINKED TO DISEASE

Rising lung cancer risk among non-smokers

VAIBHAV KAJARIA

Calcutta: Lung cancer is no longer considered a disease associated only with smoking.

While tobacco use remains one of the leading causes, there is growing evidence that environmental and genetic factors are also contributing significantly to the rising burden of lung cancer, particularly among non-smokers.

Today, ambient air pollution, poor air quality, exposure to fine particulate matter such as PM2.5, PM10, and ultrafine particles, occupational exposure to asbestos, and genetic predisposition are increasingly recognised as important risk factors.

In India, and particularly in Bengal, non-smoking lung cancer cases are becoming more common.

However, available data still suggest that lung cancer incidence among males remains numerically higher than among females.

One major reason for this trend is the higher prevalence of smoking among men in the state compared to women.

Tobacco smoking contin-

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An awareness rally on World No Tobacco Day in Esplanade on Sunday. Picture by Sanat Kr Sinha

ues to be a major contributor to lung cancer cases, but the growing incidence among non-smokers highlights the need to broaden public awareness beyond smoking alone.

Preventing lung cancer requires a multi-pronged approach.

Avoiding tobacco in all forms remains the most effective preventive measure. Individuals should also minimise exposure to second-hand smoke, industrial pollutants and hazardous substances such as asbestos.

In highly polluted urban areas, efforts to reduce indoor exposure to airborne particulate matter may also be beneficial.

Equally important is the

role of early detection and screening.

Lung cancer screening can help identify the disease at an earlier and potentially curable stage, especially among high-risk individuals. This includes people with a family history of lung cancer and elderly long-term smokers.

Early diagnosis significantly improves treatment outcomes and increases the possibility of curative treatment.

Addressing tobacco addiction is another critical aspect of lung cancer prevention.

India's National Tobacco Control Programme has been working to reduce tobacco consumption through

awareness campaigns, the creation of non-smoking zones, and support for smoking cessation.

Quitting smoking is often challenging, but several evidence-based methods are available to help individuals overcome nicotine dependence.

Behavioural counselling and psychological support

play a vital role in helping individuals quit tobacco.

Setting a fixed quit date, avoiding triggers and receiving professional guidance can improve success rates.

Nicotine replacement therapies such as chewing gums, lozenges, toffees and nicotine patches are commonly used to manage withdrawal symptoms.

In certain cases, medications such as Bupropion and Varenicline may also be prescribed to support smoking cessation.

However, these treatments should always be undertaken under proper medical supervision to ensure safety and effectiveness.

As lung cancer patterns continue to evolve, public awareness must evolve as well.

Recognising the role of environmental pollution, occupational exposure, genetics and lifestyle factors is essential for prevention, early diagnosis, and timely treatment.

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