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Short Commentary

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Air Pollution Exposure Linked to Fatty Liver Disease – Study

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Introduction

Researchers studied the impact of ambient air pollution on about 90,000 persons in China after animal studies revealed that absorbing air pollutants may raise the chance of getting fatty liver disease. Participants' sociodemographics, biometrics (blood, urine samples), lifestyle behaviours (weight, smoking, drinking, etc.) and health-related history were all obtained by the CMEC [1].

Long-term exposure to ambient air pollution, as defined by the World Health Organization as dangerous particles produced by industries, houses, automobiles, and trucks, may raise the risk of getting the disease, particularly for men who smoke, drink alcohol, and consume high-fat diets.

Metabolic-Associated Fatty Liver Disease (MAFLD), formerly known as nonalcoholic fatty liver disease (NAFLD), is characterised as an increase in fat storage in the liver, which filters blood, lipids, carbohydrates, and other biological processes.

"While physical activity along with a well-balanced diet is an important part of preventing metabolic syndrome-related morbidities like MAFLD, the discovery that ambient pollution may raise MAFLD risk could bring new insights for patient counselling."

It also serves as an extra incentive for decision-makers to accelerate efforts to comply with WHO air pollution guidelines and limits, as many cities in Europe and throughout the world continue to exceed those limits. MAFLD affects about a quarter of the world's population, particularly people with adult-onset diabetes [2-4]. Between 2012 and 2017, rates of the disease grew by 40% in Asia, the world's most populous region, which has numerous cities with high levels of air pollution. The MAFLD epidemic is linked to environmental and lifestyle changes that have happened in several Asian countries as a result of rapid industrialization. "A growing number of studies suggest that ambient air pollution, the most serious environmental concern caused by industrialization, may increase the incidence of metabolic disorders such as insulin resistance and dyslipidemia, as well as related diseases such as type 2 diabetes and metabolic syndrome."

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Air Pollution's Link to Several Diseases

Incidences of liver disease have risen dramatically in the last four decades, now impacting a quarter of the world's population. The most common type of liver disease in children is NAFLD. In the United States, the death rate from NAFLD is likewise rising. Cirrhosis or liver cancer can be caused by NAFLD, also known as metabolic-associated fatty liver disease (MAFLD). A liver transplant is required in some cases [5].

Particulate Matter Significantly Increases Disease Risk

The study discovered that greater exposure to particles and gases produced by the burning of fossil fuels increased a person's risk of developing the condition. For example, the risk increased by 29% for every 10 microgram rise in PM2.5s (fine particulate matter) per cubic metre of air. The microscopic particles get stuck in the lungs, making blood stickier and causing irritation. The same little increase in nitrogen dioxide levels - primarily caused by diesel automobiles - increased the risk of liver disease by 15%.

Men, smokers, drinkers, and those who eat a high-fat diet tend to be the most vulnerable, implying that bad lifestyles may increase the negative consequences [6].

It also serves as an extra incentive for decision-makers to accelerate efforts to comply with WHO air pollution guidelines and limits, as many cities in Europe and throughout the world continue to exceed those limits. Long-term pollution exposure is a major global health hazard. Even modest concentrations could result in tens of thousands of premature deaths in the United States each year.

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