

Lung Cancer Risk factors - A Review Article

Cagnur Elpen Kodaz

***Corresponding author**

Cagnur Elpen Kodaz,
Family Medicine, Cifteler State Hospital, Eskisehir, Türkiye.

Received Date : May 15, 2024

Accepted Date : May 17, 2024

Published Date : June 17, 2024

ABSTRACT

The most common cancer in the world with the highest death and morbidity rates is lung cancer. Research has indicated a correlation between the development of lung cancer risk and smoking, environmental variables such as occupational exposure, radon exposure, air pollution, radiation, obesity, nutrition, and inherited susceptibility. By increasing public knowledge, the prevalence of LC can be lessened by avoiding modifiable etiological factors of lung cancer, such as sensible and successful public health policies that limit tobacco use, laws that restrict tobacco use, research that lowers air pollution, and anti-smoking campaigns that target people of all ages.

Keywords : Lung cancer, risk factors, review

INTRODUCTION

Since lung cancer typically manifests as advanced stages of the disease and is frequently asymptomatic at the outset, lung cancer (LC) is the primary cause of cancer-related fatalities globally. According to histological subtype, lung cancer (LC) is primarily classified into two big groups: non-small cell lung carcinoma (NSCLC) and small-cell lung carcinoma (SCLC).

Epidemiology

With a mortality rate of 18.4 among all cancer types, lung cancer (LC) is currently the most common cancer diagnosed, accounting for 11.6% of all cancer-related diagnoses. It is also the leading cause of cancer-related deaths worldwide, affecting both genders.[4] In the USA, In 2022, there will likely be 236,740 new cases of LC and 130,180 predicted deaths from the same illness.[5] Even though the risk of LC rises with age, cases are uncommon prior to the fifth decade.[6] In the past, it was discovered that men had higher incidence rates of LC than women did; however, this disparity has recently

narrowed, with a move towards an increase in the incidence rate in women.[7]

Over the past few decades, both in women and men, the incidence of adenocarcinoma subtype has increased more quickly than that of squamous cell subtype. The World Health Organization (WHO) states that Since 2004, lung adenocarcinoma has emerged as the most common histologic subtype. This change in the historical pattern of tobacco use may be connected to the increase in lung cancer.

Risk factors

cigarette Smoking is recognized as the primary cause of lung cancer (LC) globally, and its rising prevalence has been demonstrated to be the outcome of a common addiction to smoking. Approximately 80% of new instances of LC in men and 50% in women globally are caused by smoking each year.[8] Smoking and LC risk are causally related, according to a number of evidences, including the dose-response relation and biological causation.[9] Public health became aware of tobacco's carcinogenic qualities after numerous epidemiological studies conducted since the 1950s revealed the drug to be detrimental to lung tissue.

Air contamination

One well-known notable effect of prolonged smoke emissions from industry and cars is air pollution.

LC risk factor.[20] Studies on ecology have shown that almost half of occurrences of LC take place in cities. This is most likely because, in comparison to rural regions, metropolitan areas have higher levels of air pollution due to the massive amounts of smoke from automobiles and industrial sources. A number of cohort and case-control studies revealed a strong correlation between LC and air pollution.[21, 22]

Nutrition and Diet

It is commonly recognized that human diets contain both mutagenic and antimutagenic ingredients. In the West One-third of cancer-related deaths in these countries are caused by the use of processed foods high in fat and sodium, which promotes an unhealthy body condition.[23] It has been estimated that approximately 30% of cancer types are caused by diet.[24] Consuming fruits and vegetables has been associated with a lower chance of acquiring lung cancer among smokers who are currently smoking. Similarly, it has been discovered that the risk of LC is inversely related to crisp vegetables.

Although there was an increase in hypertension compared with erlotinib alone, as previously reported [4,5], there were no

The Clinical Lung Cancer

new safety signals in patients treated with the combination of erlotinib plus bevacizumab with extended follow-up.

genetic components

Numerous studies show that smoking and other environmental variables account for more than 80% of occurrences of lung cancer. Conversely, However, it is believed that less than 20% of instances of LC are linked to a hereditary susceptibility.[29] Research on the genetic variables resulting in a higher predisposition to LC is scarce. First-degree relatives of LC patients have an elevated risk of LC after controlling for cigarette smoking.

REFERENCES

1. Nasim F, Sabath BF, Eapen GA. Lung cancer. *Med Clin North Am* 2019;103:463–73. [CrossRef]
2. Stapelfeld C, Dammann C, Maser E. Sex-specificity in lung cancer risk. *Int J Cancer* 2020;146:2376–82. [CrossRef]
3. Nooreldeen R, Bach H. Current and future development in lung cancer diagnosis. *Int J Mol Sci* 2021;22:8661. [CrossRef]
4. Oudkerk M, Liu S, Heuvelmans MA, Walter JE, Field JK. Lung cancer LDCT screening and mortality reduction - evidence, pitfalls and future perspectives. *Nat Rev Clin Oncol* 2021;18:135–51. [CrossRef]
5. Siegel RL, Miller KD, Fuchs HE, Jemal A. Cancer statistics, 2022. *CA Cancer J Clin* 2022;72:7–33. [CrossRef]
6. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2018. *CA Cancer J Clin* 2018;68:7–30. [CrossRef]
7. MacRosty CR, Rivera MP. Lung cancer in women: a modern epidemic. *Clin Chest Med* 2020;41:53–65. [CrossRef]
8. Mao Y, Yang D, He J, Krasna MJ. Epidemiology of lung cancer. *Surg Oncol Clin N Am* 2016;25:439–45. [CrossRef]
9. Alberg AJ, Ford JG, Samet JM; American College of Chest Physicians. Epidemiology of lung cancer: ACCP evidence-based clinical practice guidelines (2nd edition). *Chest* 2007;132:29S–55S.
10. Malhotra J, Malvezzi M, Negri E, La Vecchia C, Boffetta P. Risk factors for lung cancer worldwide. *Eur Respir J* 2016;48:889– 902. [CrossRef]
11. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* 2004;328:1519. [CrossRef]
12. Centers for Disease C. Smoking and health: a national status report. *MMWR Morb Mortal Wkly Rep* 1986;35:709–11.
13. Stellman SD, Muscat JE, Thompson S, Hoffmann D, Wynder EL. Risk of squamous cell carcinoma and adenocarcinoma of the lung in relation to lifetime filter cigarette smoking. *Cancer* 1997;80:382–8.
14. Dela Cruz CS, Tanoue LT, Matthay RA. Lung cancer: epidemiology, etiology, and prevention. *Clin Chest Med* 2011;32:605– 44.