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A CASE CONTROL STUDY AND REPORT ON RISK FACTORS OF LUNG CANCER IN YOUNG PATIENT

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A CASE CONTROL STUDY AND REPORT ON RISK FACTORS OF LUNG CANCER IN YOUNG PATIENT

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Abstract: Lung cancer in young patients, defined as those under 40 years of age, is an uncommon but growing concern, presenting unique clinical challenges. This case-control study was conducted to investigate the risk factors contributing to lung cancer in this demographic. The study included 150 young lung cancer patients (cases) and 300 age- and gender-matched controls. Data were collected on lifestyle habits, genetic predispositions, environmental exposures, and occupational hazards using detailed questionnaires and medical histories. Multivariate logistic regression models were employed to identify independent risk factors. Our analysis revealed that smoking (both active and passive) significantly increases the risk of lung cancer (odds ratio [OR] 3.8). Furthermore, genetic predisposition, particularly a family history of lung or other cancers (OR 2.7), as well as occupational exposure to carcinogens like asbestos and radon (OR 2.5), were identified as strong risk factors. Interestingly, 25% of the young lung cancer patients were non-smokers, pointing to the significance of environmental pollutants and genetic susceptibility. The results also highlight a higher incidence of lung adenocarcinoma in younger non-smokers. These findings emphasize the importance of heightened clinical awareness and the need for improved screening methods, even for non-smokers in this age group. The study concludes by recommending targeted preventive measures, such as better regulation of occupational hazards and enhanced genetic screening for high-risk individuals.

Key words: Lung cancer, young patients, smoking, genetic predisposition, occupational exposure, non-smokers, risk factors, environmental pollutants, case-control study

INTRODUCTION

Lung cancer remains one of the most common and deadly cancers worldwide, predominantly affecting older populations. However, a growing subset of young individuals under the age of 40 are being diagnosed with the disease. Although lung cancer in younger patients is relatively rare, its presentation is often more aggressive, and the prognosis tends to be poorer due to delayed diagnosis. Despite the lower prevalence, the burden of lung cancer in young patients is rising, necessitating a better understanding of its unique risk factors, particularly since many of these individuals do not present with traditional risk factors like heavy smoking. This study aims to explore these factors in-depth and identify key drivers of lung cancer in younger populations. [1]

Smoking is universally recognized as the leading cause of lung cancer, responsible for the majority of cases worldwide. However, it is worth noting that a significant proportion of young lung cancer patients are non-smokers, highlighting the need to investigate alternative causes such as environmental pollutants, occupational exposures, and genetic susceptibility [2]. Previous research has demonstrated a possible association between genetic factors and early-onset lung cancer, but there is limited understanding of the extent to which these factors contribute to the disease in younger populations [3]. Thus, this study seeks to evaluate both established and emerging risk factors for lung cancer in young patients, especially focusing on non-smoking-related pathways.

Moreover, the impact of environmental and occupational exposures on young individuals may be more pronounced due to their relatively longer life expectancy post-exposure, allowing more time for carcinogenesis to develop[4]. Exposure to carcinogens such as asbestos, radon, air pollution, and secondhand smoke has been implicated in lung cancer development in older individuals, and there is growing evidence that these factors may also play a critical role in younger patients. However, there is limited data on how these factors affect young adults, particularly in terms of long-term occupational