Preface

Lung cancer: a preventable disease

Lung cancer remains the leading cause of cancer-related mortality worldwide (1). Within the past decades several new therapeutic developments have been implemented in the care of this malignancy. Examples of these advances include the use of minimally invasive surgical techniques (2) or stereotactic ablative radiotherapy in medically inoperable early-stage non-small cell lung cancer (3). Better understanding of the molecular biology of lung cancer has enabled a spectacular progress in systemic treatment of this disease. Molecular targeted therapies have improved treatment safety and efficacy in advanced oncogenic-addicted non-small cell lung cancer patients (4), and immunotherapies using checkpoint inhibitors have proved to be an active treatment option for a wide range of advanced non-small cell and small-cell lung cancer patients (5,6). Although these developments have considerably changed treatment landscape of lung cancer, they are unlikely to impact a generally grim outcome of this disease—this may only be achieved by more effective primary and secondary prevention.

Lung cancer is largely perceived to be a self-inflicted disease. Indeed, it is estimated that cigarette smoking is responsible for 80–90% of lung cancers in men and 70% to 80% in women. Non-smokers who are exposed to environmental tobacco smoke have also higher risk of lung cancer than never smokers (7). Smoking lung cancer patients have markedly poorer prognosis compared with those who have never smoked (8). Continued smoking is among the strongest adverse predictors of survival in cancer patients (9) and brings a substantial additional treatment cost (10). Quitting smoking at the time of cancer diagnosis lowers the risk of dying by 30% to 40% (9). The devastating effect of smoking on general health has been strongly documented. Tobacco control is therefore the most important and achievable means to combat lung cancer mortality and all-cause mortality on global scale.

Whereas lung cancer incidence and mortality have been decreasing in high-income countries, the numbers of lung cancer cases in the developing world have been steadily rising (11). Apart from growing cigarette consumption in these regions, this trend may be partly attributed to an emerging causative role of environmental and occupational factors (12-14). Increasing air pollution also applies to developed countries, and resolving this problem becomes a growing challenge.

Within the past 15 years there has been a rapidly increasing use of electronic nicotine delivery systems and, more recently, heat-not-burn products. These devices have been marketed as a safe alternative to burnt tobacco and an effective smoking cessation product. The safety of these methods and their role as an aid in combatting smoking addiction is controversial and warrants a critical assessment.

Lung cancer screening has long remained an elusive option, as traditional detection attempts using plane chest radiographs and sputum cytology proved ineffective. Recently, the results of two large clinical trials performed in the USA and Europe have shown reduction in lung cancer specific mortality with low-dose computed tomography (LDCT) (15,16). LDCT screening raised big hope, but strategies for maximizing its benefits and minimizing harms still remain to be developed before this method is widely implemented as a public health intervention. An important aspect of lung cancer screening is also its integration with effective tobacco cessation interventions. Indeed, screening may be viewed as a 'teachable moment' allowing receptive smoking patients to gain a real benefit from cessation resources. These undertakings should be accompanied by educating healthcare providers and patients on the health benefits of cessation.

This focused issue includes original research studies, reviews and editorial commentaries that highlight the abovementioned problems. I would like to thank all esteemed authors for creating this collection. It is my hope that our endeavor will attract great interest to a wide range of physicians dealing with lung cancer and to public health specialists.

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