During the COVID-19 Pandemic, Lung Cancer Diagnosis And Care In Denmark

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Abstract

We compared the number of lung cancer diagnoses, the quality of care, and the socioeconomic and clinical characteristics of lung cancer patients during the COVID-19 pandemic to earlier periods. All patients diagnosed with lung cancer under the age of 18 between January 1, 2018, and August 31, 2021, as documented in the Danish Lung Cancer Registry, were included in the study. Using a generalised linear model, we computed the Prevalence Ratios (PR) and 95% Confidence Intervals (CI) of the relationships between the pandemic and socioeconomic, clinical, and quality-related factors.

Keywords: Lung cancer• COVID-19 pandemic• Quality of care• Socio-economic factors• Epidemiology

Introduction

The COVID-19 pandemic is a worldwide public health emergency that has significantly disrupted society and healthcare delivery systems. Large swaths of Danish society were shut down for protracted periods of time in an effort to lessen the COVID-19 pandemic's negative effects on the healthcare system and the spread of the disease. Though lung cancer detection and treatment remained available in Denmark during the epidemic, these limits that applied to the entire population and the postponement of elective surgeries at hospitals may have had unintended repercussions. Overall, it's possible that these measures to lessen the effects of the COOVID-19 pandemic led to the diagnosis of fewer, but more advanced lung tumours during the pandemic. According to studies, during the early stages of the COVID-19 epidemic, fewer incidences of lung cancer were diagnosed. According to a Danish study, lung cancer cases will decline by 10% from April to May 2020 and by 4% from March to December 2020.There was no discernible decrease in lung cancer cases in 2020, according to reports from the Danish Lung Cancer Registry and the Danish Cancer Registry. The likelihood of being diagnosed with a more advanced stage of the tumour, which would require more intensive treatment and worsen the prognosis, could rise, however, if diagnosis were delayed. However, there is little evidence to suggest that lung cancer in its advanced stages increased in Denmark during the COVID-19 epidemic. The restrictions put in place, the relocation of healthcare workers, and last but not least the possibility of an increase in advanced stage lung cancer, as described above, may have had an impact on the quality of treatment, such as surgical treatment, curative treatment, and the survival of lung cancer patients during the pandemic. At the population level, this theory is still undisputed. Lower socioeconomic groups are disproportionately affected by lung cancer, and there is concern that the epidemic may have made this disparity worse, as it did with the screening for breast, cervical, and colorectal cancer. Patients from lower socioeconomic backgrounds may find it more challenging to acquire healthcare both before and after the epidemic, and their access to care may have gotten poorer overall. We compared the lung cancer diagnosis and quality of care in Denmark during the COVID-19 pandemic to the years before. Additionally, we compared the clinical characteristics of lung cancer patients during the pandemic to those from earlier years in terms of socio-demographic parameters and clinical characteristics (i.e., underlying disease and performance status). Three COVID-19 pandemic waves have affected Denmark: in the spring of 2020, in the winters of 2020−2021, and again in the winter of 2021−2022. Testing and immunization for COVID-19. In Denmark, comprehensive COVID-19 testing has been available to all citizens since May 2020 without charge. The COVID-19 immunization campaign started in December 2020, and by March 2022, more than 61% of the population had gotten three doses of the vaccine and around 81% had received two doses. The primary variables of interest are divided into four groups, and the vaccination strategy was to first vaccinate people residing in nursing homes, then people under the age of 85, then healthcare workers, then people with underlying medical conditions and their relatives, and finally, COVID-19 vaccination was offered. Non-small cell lung cancer (NSCLC) and small cell lung cancer incidence and stage distribution, sociodemographic factors, clinical characteristics, and clinical quality indicators. Age, sex, ethnicity, cohabitation status, education level, and disposable income were sociodemographic and clinical traits. Age was determined as of the diagnostic date according to information in the Danish Lung Cancer Registry. We acquired data on race, marital status, degree of education, and income from Statistics Denmark. Danish ancestry (i.e., born in Denmark) and immigration (Western immigrants, Non-Western immigrants, and descendants of immigrants) were the two categories used to classify ethnicity. Married, cohabiting, or co-living were the two categories used to classify cohabitation status. The International Standard Classification of Education (ISCED) of the United Nations Educational, Scientific and Cultural Organisation (UNESCO) classified educational levels into three categories: short, medium, and long The five quintiles of income were established as the official annual disposable income depreciated to 2015. Comorbidity, body mass index (BMI), performance status, and lung function were clinical characteristics. Comorbidity was taken into consideration using the Charlson Comorbidity Index (CCI). Based on diagnoses entered in the Danish National Patient Register during the ten years preceding to the patient's lung cancer diagnosis, a CCI score was generated. In order to categorise levels of comorbidity into "none," "moderate," and "high" (CCI score 3), we computed the total CCI score for each patient. The official WHO nomenclature was used to classify Body Mass Index (BMI), with the exception that all three obesity classes were amalgamated into a single "obesity" category. Based on whether or not any tobacco use was recorded in the DLCR, smoking was classified as either present or past smokers or as a non-smoker. The Eastern Cooperative Oncology Group (ECOG) performance status scale was used to calculate performance status. The Tiffeneau-Pinelli index (Forced Expired Volume in the First Second (FEV1) / Forced Vital Capacity (FVC)) was used to measure lung function. Resection of lung tissue in NSCLC patients, whether the treatment (surgical or oncological) had a curative purpose (generally and only for NSCLC), and the percentage of patients who passed away within 90 days of diagnosis were all considered indicators of treatment quality. The operationalization of the clinical quality indicator used a yes/no variable. When the patient has undergone any resection, the term "resection" was defined as"yes."