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Perspectives

Lung Cancer Services and the COVID-19 Pandemic

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Abstract

The first outbreak of COVID-19 was reported in December 2019 in Wuhan, China and it was declared as a global pandemic on March 11, 2020. To cope with the high infectivity and increasing number of deaths associated with this disease, the healthcare resources of nearly all countries were directed to put measures in place to manage this disease. As a result, many other services including lung cancer care have been adversely affected as treatments have been delayed. The widespread lockdowns and advice to stay at home especially with common symptoms of cough has resulted in late presentations and possible upstaging of lung cancer. Owing to this similarity of symptoms and pressures faced by respiratory community to manage COVID-19 pandemic, the lung cancer patients will encounter delays in their management leading to untoward effects on their survival and quality of lives. According to an estimate, the impact of COVID-19 could lead to an additional 1372 deaths due to lung cancer in the United Kingdom alone. There has also been reluctance among the oncology community to treat patients with systemic anticancer agents due to fear of patients catching COVID-19 infection. There should be a balance between the risks and benefits of providing cancer services during this pandemic and every step should be taken to minimize delays faced by patients with lung cancer.

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Introduction

Patients with malignancy are considered to be more susceptible to severe morbidity and mortality from COVID-19 due to immunosuppression caused by anticancer agents and underlying pulmonary comprise that is almost always a feature of advanced lung malignancy.[1]

The widespread population lockdown and fear of contracting nosocomial COVID-19 infectionin hospitals lead to the reduction in presentations and delayed referrals of the cancer cases. Current projections indicate that the COVID-19 related disruption of healthcare systems at all levels could possibly last for minimum of 16 to 18 months after the end of the current pandemic and this is also very much dependent on the vaccine development process .[2]

This has forced the oncology community to reconfigure the diagnostic and therapeutic strategies for management of cancer patients. We shall discuss the impact of COVID-19 pandemic on lung cancer services and possible solutions to mitigate this huge challenge.

Discussion

Lung cancer is the leading cause of deaths among all cancers causing 1.76 million deaths per year world-wide according to World Health Organization (WHO) report. The five year survival rate for lung cancer is very low at below 20% in most developed nations.[3] This is in sharp contrast to the 60% of patients with colorectal cancer who cross this 5-year mark. This poor prognosis of lung cancer is attributed to late pre-sentations, lack of well-developed screening programmes and a general perception of self-inflicted dis-eases due to smoking in majority of patients. Despite recent advances in treatment of lung cancer, its prongosis has remained poor. Encouraging attempts have been made to improve prognosis of lung cancer in the last decade but we risk losing this effect due to COVID-19 pandemic. There is a significant overlap of lung cancer and COVID-19 infection symptoms, which will inadvertently result in late presentations of lung cancer. The respiratory community has mainly focused on management of COVID-19 infection and non-COVID conditions especially lung cancer care risk being overlooked. Resources allocation during a pandemic can be a challenging process and different organizations and societies across the globe have set up guidelines to prioritise management of rapidly progressive tumors with increased mortality risk, those requiring urgent surgery or radiation oncology referral and those with emergency presentations for example spinal cord compression, superior vena cava obstruction and brain metastases.[4].Several studies have demonstrated association of longer time from diagnosis to treatment and worse survival outcome for lung cancer.[5] So millimeters matter especially in stage I and II disease and every attempt should be made to minimize delays in treatment of lung cancer.

Presence of COVID-19 infection in a patient undergoing investigations for lung cancer poses significant challenges. British Thoracic Society (BTS) guidelines recommend delaying endobronchial ultrasound and bronchoscopy by 28 days in COVID-19 patients to reduce infection risks especially to staff posed by these aerosol generating procedures.[6] Provision of appropriate personal protective equipment has been a challenge especially at the beginning of COVID-19 pandemic.

As far as treatment of cancer patients with COVID-19 infection is concerned, there were conflicting and small studies at the beginning of pandemic which created uncertainty about safety of anticancer treatments in COVID-19 positive cancer patients. An earlier study from China looked at outcomes of 105 cancer patients who tested positive for COVID-19. According to this study, the mortality rate was higher in this group of patients as compared to those cancer patients who tested negative for COVID-19. Patients with lung cancer and haematological malignancies were among those with the worst outcomes.[7]

A consortium of 55 hospitals in UK conducted a prospective observational study of 800 cancer patients who tested positive for COVID-19 infection. 226 out of these 800 patients died with a mortality of 28% which was no different from general non cancer population who tested positive for COVID-19 infection. The major factors for mortality in COVID positive cancer patients are increasing age (cut-off age of about 60 years), being male, hypertension, cardiovascular disease, chronic obstructive pulmonary disease and diabetes mellitus. This was the first study to highlight the importance of taking into account these factors instead of COVID positivity when deciding about systemic anticancer treatments. 281 of these 800 patients (35%) had undergone cytotoxic treatments four weeks before testing positive for COVID-19 infection. When compared with other cancer patients who had not undergone cytotoxic anticancer treatment, there was no significant difference in overall mortality. This study gave confidence to oncology community to not to deprive patients of important anti-cancer therapies by merely taking into account their COVID positive status as shown by previous studies. Hence treatment for every cancer patient should be individualized according to above important factors and taking into account patients, wishes.[8]

Lung cancer patients had reduced access to surgical tratments during COVID-19 pandemic as anaesthesia and intensive care services shifted their focus to

pro-viding advanced care to critically ill patients with COVID-19 infection. This may result in reduced resect-ion rates for lung cancer in year 2020. Many patient support and palliative care services in the UK are mainly funded through charitable projects. COVID-19 pandemic has resulted in restricted fun-draising and increased demand of such services by lung cancer patients at advanced stage of their dis-ease.

As a significant damage has already taken place in the form of late presentations of lung cancer at adv-anced and incurable stage, it's prudent to start public campaigns to encourage patients to seek medical ad-vice in case of persistent symptoms suggestive of lung cancer. The primary care physicians should be equipped with guidelines and tools to differentiate symptoms of COVID-19 infection and lung cancer. This should be coupled with improving confidence of patients to engage in their investigations and come to hospitals where necessary.

The thoracic oncology community need to work with patients to provide individually tailored anticancer therapies in a timely fashion and where cancer patie-nts catch COVID-19, every effort should be made not to delay treatments unnecessarily depending upon age, gender and co-morbidities of patients.

The surgical capacity for lung cancer patients should be ring fenced and operation not unduly cancelled. The studies show a 16% increased mortality in case of delay of 40 days for surgery in lung cancer pati-ents.[9]

Cancer research plays a key role in discovery of further treatments. Unfortunately all lung cancer res-earch activities were paused during the first wave of Covid-19 pandemic. These non COVID cancer trials should restart recruiting process as soon as possible as today's research will inform further developments in near future. COVID-19 pandemic has taught us about new trials designs and how the appropriate pro-jects can be approved within days by the regulatory authorities instead of months. This will help catching up with the lost time with research activities during COVID-19 pandemic.

Virtual multidisciplinary team meetings (MDT) have revolutionized how the lung cancer community inter-acts to devise management plans. This will require support of good IT systems but the change is welc-ome and has facilitated attendance of different speci-alties using different online platforms. The remote consultations for lung cancer patients using good audiovisual systems and telemedicine is a game cha-nger. Care should be taken to practice empathy when conveying difficult news and where possible tailored consultations and face to face appointments for indi-vidual patients should be facilitated.[10].

Conclusion

The integrity of the healthcare systems especially the cancer services has been tested by COVID-19 pande-mic and every step should be taken to restore cancer services to pre pandemic level. Ignoring life limiting non COVID-19 conditions such as lung cancer for too long may turn one public health crisis into many others and we should try to avoid it. We must also exercise a balance between the risks and benefits of investigations and treatments for lung cancer in the context of COVID-19 pandemic and restore lost confidence of our patients.

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