



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

those with mild/moderate infection (median age: 74.1 and 73.8 yrs vs. 72.1 yrs;  $p=0.01$ ). Patients who suffered a fatal or severe infection were also more likely than patients with mild/moderate infection to exhibit elevated creatinine levels (50.0% and 31.5%, vs. 20.5%,  $p=0.003$ ) and low hemoglobin levels (67.6% and 51.9%, vs. 39.0%,  $p=0.003$ ). In addition, 70.6% of patients who died within two weeks of SARS-CoV-2 infection suffered from diabetes, compared to 40.2% of patients with mild/moderate infection. On multivariable logistic regression, variables associated with increased odds of severe infection or death were: age (OR: 1.07; 95% CI 1.03-1.12;  $p=0.002$ ), stage IV (6.06; 1.19-30.84; 0.03), elevated creatinine (2.29; 1.2-4.39; 0.01), anemia (2.02, 1.07-3.83; 0.03). Type of cancer treatment, recent surgery or radiation, chronic obstructive pulmonary disease, hypertension, diabetes, acute myocardial infarction were not associated with an increased risk of severe/fatal infection. Factors associated with fatal infection included checkpoint inhibitor therapy (OR: 7.06; 95% CI, 1.21-41.11;  $p=0.03$ ), diabetes (3.53; 1.9-11.46; 0.04) and abnormal creatinine level (4.48; 1.52-13.15; 0.006). **Conclusion:** Almost 25% of lung cancer patients with COVID-19 infection developed complications or died. Increasing age, stage IV disease, abnormal kidney function and low hemoglobin level were associated with a severe/fatal SARS-CoV-2 infection, while checkpoint inhibitor therapy, diabetes and abnormal creatinine levels were associated with increased mortality from COVID-19 disease. **Keywords:** Lung cancer outcomes, COVID-19 disease, risk factors

or were uncertain of the impact (36%). The risk of contracting COVID-19 is a major concern with 59% of respondents worrying about this "often" or "always" and 55% changing how frequently they go to their cancer center. Only 5% have considered stopping their anti-cancer therapy due to COVID-19. Most respondents (60%) reported no change in the format of their appointments, compared to 20% and 14% who reported increased use of phone and video visits, respectively. Although 21% of respondents felt that having virtual appointments affected their cancer care negatively, most reported either no impact (61%) or a positive impact (13%) on their care. Regarding patient knowledge about the impact of cancer/anti-cancer therapy on risks of COVID-19, 69% and 62% believed that having cancer and being on treatment increases severity of COVID-19 illness, respectively. Up to 25% of respondents reported not knowing the impact of their cancer diagnosis/treatment. **Conclusion:** Despite the known impact of the pandemic on patient care, our global survey illustrates that most thoracic cancer patients do not perceive that their overall cancer care has been compromised. Virtual appointments will continue to be useful in light of patients' concerns about COVID-19. Considering the high proportion of respondents indicating uncertainty, continued patient education regarding the impact of cancer and anti-cancer therapies on risks of COVID-19 is critical during this challenging time. Data collection is ongoing and updates will be presented. **Keywords:** thoracic cancer, TERAVOLT, COVID19

#### MA12.03

### A Thoracic Cancers International COVID 19 Collaboration Survey on Patients' Perceptions of COVID-19 (Teravolt-Paper)



**S. Wong,<sup>1</sup> J. Whisenant,<sup>1</sup> M. Gauthier,<sup>2</sup> M. Garcia,<sup>3</sup> A. Moore,<sup>4</sup> J. King,<sup>4</sup> F. Barlesi,<sup>5</sup> M.C. Garassino,<sup>6</sup> N. Leighl,<sup>3</sup> R. Soo,<sup>7</sup> L. Horn<sup>1</sup>**  
<sup>1</sup>Vanderbilt University Medical Center, Nashville/US, <sup>2</sup>Centre Hospitalier Universitaire de Sherbrooke, Sherbrooke/CA, <sup>3</sup>Princess Margaret Cancer Centre, University Health Network, Toronto/CA, <sup>4</sup>Go2 Foundation for Lung Cancer, Washington Dc/US, <sup>5</sup>Gustave Roussy Cancer Campus, Villejuif/FR, <sup>6</sup>The University of Chicago, Chicago/US, <sup>7</sup>National University Cancer Institute Singapore (Ncis), Singapore/SG

**Introduction:** The coronavirus disease 2019 (COVID19) pandemic has overwhelmed healthcare systems and disrupted patient care worldwide. Thoracic cancer patients are at increased risk of morbidity and mortality due to underlying malignancy and immunosuppressive anti-cancer therapies, in combination with older age, smoking habits, and pre-existing lung disease. The objective of the TERAVOLT-PAPER survey is to understand thoracic cancer patients' perceptions of the impact of COVID19 on their cancer thereby informing providers of efforts needed to encourage ongoing care. **Methods:** Adults with a diagnosis of NSCLC, SCLC, mesothelioma, thoracic carcinoid and/or thymoma from TERAVOLT-affiliated institutions and advocacy organizations were invited to complete an anonymous, multilingual web-based survey. **Results:** As of April 2021, 156 patients have participated. Of the total responses received in each survey field: 57% female, 60% over 60 years old, 64% white, 51% current or former smokers, 64% with undergraduate-level education or higher, and 38% have not received the flu vaccine in the past 12 months. 68% of respondents were on active anti-cancer treatment, majority (68%) on palliative therapy. While most (76%) reported no impact of COVID19 on their treatment schedule, those who experienced delays more commonly reported them to be at the physician's decision vs patient request (17% vs 4%). Among those with delays, 52% did not feel these delays would impact their long-term cancer care. As for 32% of respondents undergoing surveillance, 70% reported no change in their appointment schedule, 18% reported delays at the physician's decision, and 2% delays at patient request. Among those with delays, most respondents either did not feel these changes would impact their long-term cancer care (36%)

#### MA12.05

### The Impact of the COVID-19 Pandemic on Post-Operative Outcomes of Thoracic Cancer Surgery in Canada

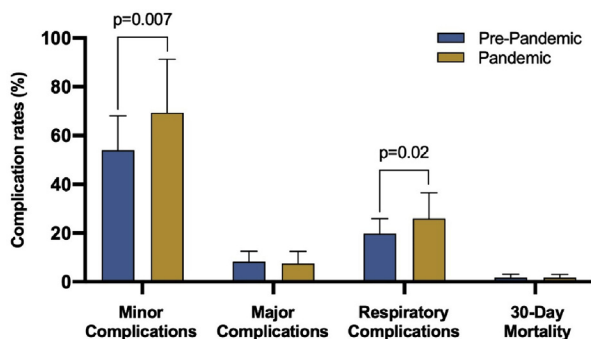


**C. Huynh,<sup>1</sup> M. Sorin,<sup>1</sup> D. Jones,<sup>2</sup> A. Simone,<sup>2</sup> E. Delic,<sup>2</sup> A. Fazekas,<sup>2</sup> M. Gingrich,<sup>2</sup> C. Anstee,<sup>2</sup> A. Seely,<sup>2</sup> J. Spicer<sup>1</sup>**  
<sup>1</sup>Division of Thoracic and Upper Gastrointestinal Surgery, Department of Surgery, McGill University Health Centre, Montreal/QC/CA, <sup>2</sup>Division of Thoracic Surgery, Department of Surgery, University of Ottawa, Ottawa/ON/CA

**Introduction:** During the COVID-19 pandemic, surgical services had to adapt their priority of operations to ensure an optimal and safe delivery of care. To minimize disease transmission and create surge capacity, elective and non-emergent procedures, including cancer operations, were initially delayed or cancelled. Studies have described an increase in post-operative complications during the pandemic for cancer patients undergoing surgery, while others have shown that thoracic surgery can be conducted safely despite this global health crisis. This study aims to understand the impact of the pandemic on post-operative outcomes of patients undergoing thoracic cancer surgery in the context of variable surgical volume and community disease prevalence. **Methods:** Adults undergoing emergency or elective surgical procedures for suspected or confirmed lung, esophagogastric, mediastinal and chest wall malignancies at 2 Canadian tertiary care centres from 2 provinces between March 2017 and February 2021 were included. The prospectively-entered Canadian Association of Thoracic Surgeons National Database was queried for patient demographic, diagnostic, operative and post-operative data. The primary outcome was complication rate (minor complications, major complications, respiratory complications, 30-day mortality). The secondary outcome was thoracic cancer surgery volume. 'Pre-pandemic' was defined as the period from March 2017 to February 2020, and 'pandemic', from March 2020 to February 2021. Descriptive statistics, t-tests and non-parametric tests were used. **Results:** A total of 3,853 patients were included. During the pandemic, 991 surgical procedures were performed. Median age was 68.0 [60.5-74.0] years. Procedures were mainly for lung cancer (73.1%), with rare emergent surgeries (2.2%). No differences were observed for diagnosis, surgical priority, operative approach or length of stay between pre-pandemic and pandemic periods. At both centres, monthly minor complication rates were significantly higher during the pandemic as

compared to pre-pandemic (mean 69.4% vs. 54.0%,  $p=0.007$ ). Respiratory complications were also significantly more common during the pandemic (mean monthly rate 26.0% vs. 20.0%,  $p=0.02$ ). No difference was observed for major complication or 30-day mortality rates.

### Pre-pandemic and pandemic thoracic cancer surgery complication rates at Canadian institutions



**Conclusion:** In locations with high prevalence of COVID-19, the pandemic has impacted the rate of minor complications and respiratory complications after thoracic cancer surgery, with no impact on major complications and 30-day mortality. Larger national studies could help further evaluate the correlation between various community respiratory infection rates and thoracic surgical outcomes. **Keywords:** post-operative complications, covid-19, thoracic cancer surgery

### MA12.06

#### Single Fraction Lung Stereotactic Body Radiotherapy Implementation in a Multi-Center Provincial Cancer Program During the COVID-19 Pandemic



**B. Mou,**<sup>1</sup> **D. Hyde,**<sup>1</sup> **C. Araujo,**<sup>1</sup> **L. Bartha,**<sup>1</sup> **A. Bergman,**<sup>2</sup> **M. Liu**<sup>2</sup> <sup>1</sup>BC Cancer Kelowna, Kelowna/BC/CA, <sup>2</sup>BC Cancer Vancouver, Vancouver/BC/CA

**Introduction:** During the COVID-19 pandemic, cancer centers worldwide were compelled to consider shortened radiotherapy regimens to minimize the risk of infectious exposure of patients and staff members. Larger institutions with multiple treatment centers may face greater challenges when developing consensus guidelines and implementing new treatment initiatives. We describe the implementation of single fraction (SF) lung stereotactic body radiotherapy (SBRT) in a multi-center provincial cancer program. **Methods:** British Columbia, Canada has a provincial cancer program with radiotherapy services distributed across six regional centers serving a population of 5.1 million people. In March 2020, coordinated provincial mitigation strategies were developed in anticipation of decreased access to radiotherapy during the COVID-19 pandemic. The provincial lung radiation oncology group identified SF lung SBRT as a mitigation measure supported by high quality randomized evidence that could provide comparable outcomes and toxicity to existing fractionated SBRT protocols. A working group of radiation oncologists and medical physicists performed a literature review and drafted provincial guidelines and procedures. The guidelines were reviewed by a group of center representatives as a component of provincial lung radiotherapy mitigation strategic planning. Individual centers were encouraged to implement SF lung SBRT as their resources and staffing would permit. Centers were then surveyed about barriers encountered during the implementation process.

**Results:** A working group was created and consensus guidelines for SF lung SBRT were drafted on March 24, 2020. The working group approved and distributed the final version of the guidelines on March 26, 2020. The provincial lung radiotherapy mitigation strategy group adopted the guidelines for implementation on April 1<sup>st</sup>, 2020.

Implementation was completed at the first center on April 27, 2020. Barriers to implementation were identified at 5 of 6 centers. Two centers situated in regions with disproportionately high volumes of positive COVID-19 cases cited inadequate staffing as a primary obstacle for implementation. One center experienced delays attributed to pre-scheduled commissioning of new treatment techniques. Three centers described competing priorities as reasons for delayed implementation. As of February 2021, two centers had active SF lung SBRT programs, three centers were in the process of implementation, and one center had no immediate plans for implementation because of persistent resource issues. **Conclusion:** SF lung SBRT was launched in a multi-center provincial cancer program within weeks of conception during the development of radiotherapy mitigation strategies for the COVID-19 pandemic. Although consensus guidelines were adopted quickly, the actual implementation by individual centers varied owing to differences in resource allocation and staffing among the centers. Strong organizational structures and early identification of potential barriers may improve the efficiency of adopting new treatment initiatives in large distributed radiotherapy programs. **Keywords:** stereotactic body radiation therapy, pandemic, implementation

### MA12.07

#### Oncological Procedures and Risk Assessment of COVID-19 in Thoracic Cancer Patients: A Picture From an Italian Cancer Center



**M. Bungaro,**<sup>1</sup> **V. Bertaglia,**<sup>2</sup> **M. Audisio,**<sup>1</sup> **E. Parlagreco,**<sup>1</sup> **C. Pisano,**<sup>1</sup> **V. Cetoretta,**<sup>1</sup> **I. Persano,**<sup>1</sup> **F. Jacobs,**<sup>1</sup> **C. Baratelli,**<sup>2</sup> **L. Consito,**<sup>2</sup> **M.L. Reale,**<sup>2</sup> **F. Tabbò,**<sup>2</sup> **P. Bironzo,**<sup>3</sup> **G. Scagliotti,**<sup>1</sup> **S. Novello**<sup>1</sup>

<sup>1</sup>Medical Oncology, A.O.U. San Luigi Gonzaga Hospital, University of Torino, Orbassano/IT, <sup>2</sup>Medical Oncology, A.O.U. San Luigi Gonzaga Hospital, Orbassano/IT, <sup>3</sup>Department of Oncology, University of Torino, Orbassano/IT

**Introduction:** At the end of 2019, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) and its clinical manifestation, the coronavirus disease 2019 (COVID-19), have rapidly spread across the globe. Since then, Italy soon became one of the most affected countries. Patients with thoracic malignancies had the highest frequency of severe complications. In this challenging situation, healthcare systems modified their practice by introducing strict infection control measures to ensure optimal cancer care. This study aimed to investigate the efficacy of pre-procedure screening for COVID-19 and whether infection influenced the opportunity of patients to receive timely diagnosis and therapy. **Methods:** We retrospectively collected data of oncological procedures of patients with confirmed or suspected diagnosis of thoracic malignancies treated at Oncology Department or coming from the Emergency Department of San Luigi Gonzaga University Hospital between June 2020 and March 2021 (from the end of the first wave until the middle of the third one). According to an internal protocol, outpatients were evaluated by a clinical questionnaire and a nasopharyngeal swab (NPS) performed 24/48 hours before oncological procedures. Inpatients were tested before hospitalization and after 24, 48 hours, seven days and then in case of appearance of symptoms. Descriptive statistics were used to summarize the data. Categorical variables were summarized as counts and percentage. In this abstract we present the preliminary results. **Results:** 125 patients were included in this analysis. Median age was 72 years (range 21-83), males were 64%. At the time of the procedures ECOG Performance Status was: 0 in 46 patients (36.8%), 1 in 66 (52.8%) and 2 in 13 (10.4%). Histological types were: 108 (86.4%) NSCLC, 9 (7.2%) SCLC, 7 (5.6%) mesothelioma and 1 (0.8%) amartochondroma. The majority of patients (80%) were in stage IV. 135 programmed procedures were performed: 102 (75.5%) were diagnostic (75 lung biopsies, 21 bronchoscopy, 1 lumbar puncture, 2 thoracoscopies, 1 thoracentesis, 1 gastroscopy and 1 thoracic surgery), 25 palliative and 8 therapeutic. Eighty-nine (66%) and 46 (34%) procedures were performed in