

Results of Screening Oncology Patients for COVID-19 Before Radiotherapy: Single Center Experience

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Dear Editor,

In literature, higher mortality rates due to COVID-19 infection have been reported in cancer patients.¹ In particular hematological and lung cancers and all metastatic cancers have been reported to worsen the clinical course of COVID-19 infection.¹ Therefore, maximum attention should be given to the prevention of transmission of COVID-19 infection to cancer patients.

During pandemic, our clinic has implemented the recommendations in line with the national and international cancer associations for the prevention spread of the pandemic.²⁻³ Implementation of hypofractionation or delaying treatment of low risk cancers is encouraged during outbreaks. In addition, it was aimed to reduce the number of outpatient crowds by making non-emergency follow-ups over the phone. In addition, COVID-19 RT-PCR test was routinely performed on the patients 2 days before radiotherapy to protect other patients and staff as well as to organize their treatment against COVID-19 infection. Treatment was commenced only after active COVID-19 infection was ruled out. This is a very effective way of infection control. Radiotherapy of positive patients was postponed until their infection was controlled. This might be oncologically detrimental but high acute mortality rate due to COVID-19 led to prioritization of infection control. The aim of this study is to determine the rate of COVID-19 infection among

cancer patients before starting radiotherapy. We also investigated clinical and demographic characteristics of COVID-19 positive patients.

Between 1 July 2020 and 1 April 2021, 805 patients were screened with the COVID-19 RT-PCR test by oropharyngeal and nasopharyngeal swab before radiotherapy and the results of the test were positive in 15 (1.86%) of these patients. Patients with positive PCR tests were analyzed according to their clinical, laboratory, and demographic characteristics (Table 1). Eight of the patients were male and seven of them were female. The median age was 63 (17-90) years. Lung cancer was the most common cancer seen in patients with a positive test. Four patients were diagnosed with lung cancer followed by breast and colorectal cancer with 2 patients in each group. Nine (60%) of the patients had distant metastases and were referred to our department for palliative radiotherapy. Each patient was asked if they had symptoms such as fever, cough, shortness of breath, headache, muscle pain, weakness, changes in taste and smell. Nine of the patients (60%) had symptoms, the most common symptom was dyspnea. One patient had fever and shortness of breath, 4 had only shortness of breath, 2 had cough, 2 had fever. Six patients (40%) had no symptoms. According to blood tests, 10 patients had lymphopenia. Two of the patients with lymphopenia had leukocytosis and elevated CRP levels.

Table 1. Demographic, clinical features and laboratory findings of COVID-19 positive patients

Patient characteristics	n (%)
Sex	
Male	8 (53%)
Female	7 (47%)
Age (median)	63 (17-90)
Primary Site Of Cancer	
Lung cancer	4 (27%)
Breast cancer	2 (13%)
Colorectal cancer	2 (13%)
Brain tumor	1 (6%)
Endometrium cancer	1 (6%)
Cervix cancer	1 (6%)
Gastrointestinal cancer	1 (6%)
Prostate cancer	1 (6%)
Basal cell cancer	1 (6%)
Soft tissue sarcoma	1 (6%)
Stage of cancer	
Metastatic disease	9 (60%)
Non-metastatic disease	6 (40%)
Comorbidity	
Hypertension	4 (25%)
Diabetes	2 (12%)
Asthma	1 (6%)
COPD	1 (6%)
Autoimmune disease	1 (6%)
Symptoms	
Asymptomatic	6 (40%)
Symptomatic	9 (60%)
Laboratory findings	
Lymphopenia	10 (67%)
Increased CRP	2 (12%)
Leukocytosis	1 (6%)
Increased Ferritin	12 (80%)
Smoking	3 (20%)

Seven (46%) of the patients had comorbid diseases. Four patients had hypertension, one patient with hypertension had rheumatoid arthritis and one with hypertension had diabetes. Other than that, 1 of the patients had diabetes, 1 had asthma, and 1 had chronic obstructive lung disease (COPD). While 3 of the patients were active smokers, 3 of them were ex-smokers. Ferritin levels were high in 12 of the patients. In addition, 2 of the patients were using public transport to arrive at the hospital.

Oncology patients are extremely susceptible to COVID-19 infection due to their immunosuppressive situation caused by malignancy or treatment and might have poorer prognosis.¹ Moreover, the mortality rate is higher in cancer patients.¹ COVID-19 infection is likely to be asymptomatic in immunocompromised individuals with comorbid conditions, such as cancer patients. Asymptomatic patients carry a significant risk of transmitting the disease to healthcare workers and other patients during their treatment. Therefore, pre-treatment PCR testing is of great importance in detecting asymptomatic patients. According to the joint decision of European Society for Medical Oncology (ESMO), it is recommended that all cancer patients should be screened with an RT-PCR test before receiving treatment.³

In our clinic, the COVID-19 RT-PCR test has been routinely performed on each patient before treatment. PCR test was positive in 15 (1.8%) of 805 patients and 6 (40%) of them were asymptomatic. The COVID-19 infection rate in cancer patients differed in the literature. In the study of Yang et al., the COVID-19 infection rate in cancer patients was found to be 3.3%.⁴ Namal et al, found 8.9% COVID-19 positivity when they screened 312 patients before chemotherapy and 89.3% of them were asymptomatic.⁵ In Namal's study infection rate and the asymptomatic infection rate were higher compared to our study. The authors suggested that this high rate of asymptomatic infection may be a reflection of the immune-suppressive condition of cancer patients. This difference in infection rate might be due to patient characteristics.

In our study, by previous publications, lung cancer was detected most frequently in cancer patients infected with COVID-19.^{1,4} Eight (53%) of the cancer patients with COVID-19 in our study had severe symptoms and needed intensive care support. Seven (46%) of the 15 patients we identified with the PCR test died from COVID-19. Similar mortality rates have been reported in the study of Acar et al. (%46,5).⁶ In the study of Namal et al., only 1 of 28 COVID-19 infected patients died.⁵ When compared to Namal's study, in our study mortality (%46) was higher. There may be several reasons for the higher death rate. Being older, having comorbidities in addition to cancer, and

being metastatic may be a factor in high mortality.⁵ In a nationwide cohort study in China, Liang et al. found that patients with cancer not only had a higher risk of SARS-CoV-2 infection, but also an increased risk of serious clinical events (ICU admission, need for invasive ventilation, or death) compared to non-cancer patients.¹ In this study, 39% of cancer patients with COVID-19 developed severe symptoms, while only 8% of non-cancer COVID-19 patients developed severe symptoms.¹

In our study, 60% of patients infected with COVID-19 were metastatic cancer (stage IV) patients. In addition, a higher risk of death was found in patients with metastatic cancer (stage IV) in a multicenter cohort study conducted in China.⁷ This is consistent with this cohort in our study, all patients who died in our study were stage IV, cancer patients.

In addition to the risk of transmitting the disease to other people, undetected asymptomatic patients are at risk of worsening the course of COVID-19 infection by continuing their oncological treatment.⁸ In cancer patients, COVID-19 is more severe and the death rate is higher than in patients without cancer. Advanced age, comorbidities such as diabetes, hypertension, and chronic diseases such as COPD and heart failure increase mortality even more.⁹ Therefore, maximum care should be taken in the treatment of cancer patients. In summary, screening cancer patients who will receive radiotherapy for COVID-19 infection is important both for the regulation of their treatment, the protection of other patients and healthcare workers. In this way, we ensured the continuity of the treatment of other patients. Although not possible before every treatment, patients should be tested for COVID-PCR at regular intervals to identify asymptomatic patients.

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