



Review**Precautions Taken in Radiotherapy Clinics in Covid-19 Pandemic**Ahmet Murat Şenışık¹ ¹Health Services Vocational School, Altınbaş University, Istanbul, Turkey

Abstract: It has been shown that cancer patients may have a higher risk of Covid-19 than non-cancers, and cancer patients are affected more rapidly than Covid-19. Covidien Turkey as well as in all the world-pandemic period 19 measures taken urgently in the radiotherapy clinic and has been implemented. The scope of measures and applications taken in this study was evaluated. One-to-one interviews with radiotherapy clinics have determined the precautions taken in the clinics. The measures proposed by the Ministry of Health and the Turkish Radiation Oncology Association and the measures applied by the American Radiation Oncology Association were compared. Hygiene, which is the first precaution for Covid-19, has been emphasized in all clinics and measures have been taken regarding the use of necessary protective equipment. By making arrangements in the patient hours, the confrontation of patients in the waiting rooms is minimized. Before each treatment, the risk of transmission in the clinics was reduced by asking for additional tests from those with suspected Covid-19 by measuring the fever of the patients and monitoring the patient. Patients who were diagnosed with Covid-19 were discontinued from their general condition by stopping their treatment until they recovered. The measures taken are similar to those taken worldwide. It is pleasing that the number of patients decreases day by day and the number of cases seen in clinics is low. It should be taken into consideration that additional measures will be needed in case of new attack periods.

Keywords: Covid-19; radiotherapy; protection methods; treatment change; hygiene measures; overtime planning

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1. Introduction

The coronavirus, first seen in China about 17 years ago, caused the death of millions with the SARS outbreak (Liang et al., 2020). Later, it was determined that the virus, which evolved with the transition between species, could be transmitted to human and striking facts were shown by experiments. The virus has been reported to affect the respiratory tract and has to cease close contact. It was a concern that the vaccines obtained did not provide complete protection. In late 2019, there was fear, and the virus was

transmitted to humans and spread rapidly to the world. Due to its spreading rate and an increasingly bad situation, a pandemic occurred in a short time, and countries faced rapidly increasing deaths against taking urgent measures in order (Combs et al., 2020).

Symptoms seen by transmission of the virus to humans have been reported as high fever, cough and shortness of breath. The first case was reported on March 10, 2020 in Turkey. With the announcement of the pandemic, the Ministry of Health sent instructions to hospitals to take necessary measures (Wang et al., 2020).

Radiotherapy is a radiation therapy used in the treatment of cancer patients. Most of the treatments of cancer patients are covered by radiotherapy. Radiotherapy can sometimes be accompanied by surgery and chemotherapy. Radiotherapy is a long-term treatment given to the patient in fractions. Treatments can last for about 5-6 weeks. This increases the risk of close contact and transmission in radiotherapy clinics ("Radiotherapy-Ministry of Health," 2017).

Wang et al.(Wang et al., 2020) and Liang et al. (Liang et al., 2020) showed that cancer patients may have a higher risk of Covid-19 and cancer patients are affected faster than Covid-19 compared to non-cancerous individuals. Radiotherapy clinics are going through a new and difficult period with Covid-19.

Keeping oncology clinics in operation during this period has brought some special precautions. The Ministry of Health has reported the measures to be taken in radiotherapy clinics in a letter. Similarly, the Turkish Radiation Oncology Association (TROD) has sent a recommendation letter containing measures to be followed by the clinics ("Ministry of Health Precautions," 2020; TROD, 2020). The American Clinical Oncology Association (ASCO) has provided recommendations to colleagues and precautions to be taken based on the conditions they face across the World ("ASCO," 2020).

Employees, patients and patient relatives should be informed about the symptoms of Covid-19 and ways of prevention. Face to face interviews with patients should be kept as short as possible. Informations should be made by phone. Patient appointments should be well organized and the necessary free time period should be provided between each patient. Attention should be paid to hygiene rules first, and situations that would threaten both the patients and their relatives should be avoided with the new emergency plans created ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020).

As the primary way of protecting against Covid-19 is hygiene and close contact, necessary measures should be taken in general radiotherapy units and patient waiting rooms in control and treatment rooms ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020). Adequate disinfectant should be provided and patients and staff should be trained on the effective use of disinfectants. For surface disinfectants, it is important to use fast active solutions ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020). Relatives of the patients should be prevented to accompany the treatment as much as possible. Thus, the number of people contacted in the clinic should be tried to be reduced. A critical issue in this particular pandemic is the availability of protective clothing. Treatments will not be disrupted as long as there are sufficient protective equipment ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020).

It should be noted that masking to personnel and patients protects both sides. Care must be taken in this regard and unmasked patients should not be taken. As a more advanced personal protection equipment, disposable coveralls, disposable gowns and face shields should be used. Considering the difficulty of working with the mask for a long time, the working times applied to the staff should be arranged according to the patient appointments. The personnel's right to leave should be observed and should not be overworked. Treatment planning should be made at a certain time of the day for patients known or suspected of Covid-19. For patients at high risk of Covid-19 (such as patients with lung cancer), treatment planning should be done at a different time than Covid-19 patients. Separate access and equipment should be used for patients without Covid-19 and for patients with known or suspected Covid-19. In order to detect the early onset of typical Covid-19 symptoms (fever, cough, sore throat, shortness of breath, fatigue) in patients treated in the department of radiation oncology, it is recommended that both employees and patients who come to the treatment be checked daily and subjected to a short questionnaire including symptoms. Treatment of patients should be revised and hypofractionated treatments should be initiated when necessary ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020).

The time period between the treatment periods of patients should be extended and all equipment used after each patient should be disinfected. In patients undergoing radiotherapy and suspected of having typical symptoms of Covid-19, treatment should be discontinued immediately and the test results should be followed by sending the patient to a pandemic clinic. Radiotherapy and Covid-19 patients are at risk for serious complications such as pneumonia and hospitalization. According to the Zhang et al. article (Zhang & Zhang, 2020), there is a strong relationship between radiotherapy and the serious effects of Covid-19 infection (HR=4.079, 95% CI 1.086-15.322, P=0.037). Although these data are limited, interruption of radiotherapy should be considered in patients with active Covid-19, since continued treatment can lead to more serious complications. There are no clear indications of how long a patient should overcome the symptoms of Covid-19 before starting radiotherapy. However, treatment should not be continued until to be sure that the virus is no longer available. In Covid-19 positive patients who do not start treatment, it should be recommended to start treatment after recovery. It is recommended to postpone cancer screening procedures such as mammograms and colonoscopy. It is recommended that cancer screening procedures continue with benefit/loss analyzes. It is deemed appropriate to suspend the follow-up of the follow-up patients except for emergencies and re-plan according to the current risk ("ASCO," 2020; "Covid-19/Ministry of Health," 2020; TROD, 2020; Wang et al., 2020).

As a result, the measures taken are similar to those taken worldwide. It is pleasing that the number of patients decreases day by day and the number of cases seen in clinics is low. It should be taken into consideration that additional measures will be needed in case of new attack periods. The important thing is to understand how much these measures are applied in clinics. Our work on flour continues.

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Conflict of Interest

Author declares no conflict of interest.

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