

SUGGESTIONS FOR THE MANAGEMENT OF ONCOLOGY PATIENTS IN RADIOTHERAPY FACILITIES DURING THE COVID-19 OUTBREAK

Introduction

The purpose of this paper is to provide indications for the management of radiotherapy treatments in the period of emergency linked to the COVID-19 outbreak.

The different epidemic situations existing in the various Italian regions has made it possible to provide only indications collected from documents issued by the Ministry of Health and the Italian National Institute for Healthcare, from a paper prepared by some managers of radiotherapy facilities and from the experiences acquired in the regions which are most severely affected by the outbreak, to support this medical activity that for many patients is a fundamental treatment.

The document "Recommendations for the management of oncology and onco-hematology patients during the COVID-19 outbreak" prepared by the Ministry of Health, emphasizes that "patients suffering from oncological or onco-hematological pathologies [...] are particularly at risk of morbidity and death as a result of respiratory virus infections."

The official data related to the COVID-19 outbreak are currently very few, but patients with oncological or oncological-hematological diseases are thought to be exposed to a greater risk of contracting the infection and to a more severe course. "If a patient has undergone chemotherapy and/or surgery in the month preceding the infection, this is an additional risk factor ", a situation that is quite common in patients undergoing radiotherapy.

The ministerial document divides patients into two large groups:

- 1) Patients who have completed the therapy and are undergoing follow-up;
- 2) Patients under treatment, divided into the following two subgroups:
 - a) Patients undergoing pharmacological and/or radiation therapy are at a greater risk of infectious complications due to previous major surgery;
 - b) Patients receiving immunotherapy drugs.

At the moment, no COVID-19 specific and effective vaccine or antiviral drugs are available, and the general recommendations on hygiene rules apply to all patients. It is useful to repeat these recommendations as patients attending oncologic radiotherapy facilities are mainly outpatients and they therefore live at home.

- Avoid crowded places;
- Wear the a surgical mask outside your own home, especially when visiting a hospital for examinations and/or treatments;
- Practice accurate and frequent hand hygiene;
- Avoid receiving family or friends at home, particularly if they present respiratory symptoms and/or come from areas at risk;

Patients listed above under 2a and 2b:

- must be guaranteed the necessary cancer treatment in order to safeguard the principle of not adversely affecting the prognosis of the disease being treated;
- Pathways and spaces dedicated to these patients must be established; the waiting rooms must be occupied only by those receiving treatment and they must be spaced at least one meter apart. Their helpers have to wait outside the facility. Patients who are not self-sufficient will be received by the staff of the oncological radiotherapy facility and accompanied to the treatment site;
- It is necessary to space out the arrival of patients attending the facility both for treatments and for the initial procedures in order to avoid crowding;
- All healthcare providers must wear appropriate personal protective equipment (PPE) (surgical masks and disposable gloves)
- In order to prevent patients with respiratory symptoms from entering the facilities, the nursing staff at the reception will have to check if the patients present these symptoms. If yes, they must advise the radiotherapist oncologist who will refer the patient to a dedicated examination room and start the procedures established in each single facility;
- If a patient undergoing treatment tests positive for COVID-19 or has been exposed to people with COVID-19 infection, the need to continue treatment must be evaluated in relation to the patient's clinical condition. If necessary, specific strategies must be used to ensure continued therapy while safeguarding the health of the staff and other patients.

In group 1 patients, i.e. those who have already completed radiotherapy, follow-up should be postponed after evaluation by a specialist. If follow-up can be postponed, it is advisable to check the investigation requested at the previous follow-up examination, if any. The report(s) must be forwarded to the radiotherapy facility over the internet in order to avoid any potential risk of contagion and at the same time to reassure our patients.

Sanitization of the environment

Considering the high risk of infection, sanitation of the surfaces with which the patient and healthcare providers come into contact should be carried out as frequently as possible using the devices recommended by the ministerial circulars.

Summary table of indications:

SITUATION	COMMENTS	SOLUTION
Asymptomatic patients undergoing radiotherapy.	Radiotherapy is often a life-saving treatment. Also palliative care will allow the patient to improve his/her quality of life.	Treatment must not be discontinued.
Planned treatment of asymptomatic patients has still not been started.	Many treatments are part of an already planned program. Postponement of these treatments may impair the patient's prognosis. If the radiotherapist oncologist	Treatment must be continued if the radiotherapist oncologist considers that postponement will cause damage to the patient's health.

	finds that it is possible to delay treatment, it should be postponed.	
Symptomatic patients undergoing treatment.	Discontinuation of radiotherapy may impair the patient's possibility to recover.	A patient presenting flu-like symptoms at triage must wear a mask and be taken to a separate room reserved for this use. The radiation oncologist will decide if radiotherapy can be discontinued or considered completed. The authorities in charge must be informed immediately and in any case according to the existing regional regulations. After diagnosis related to the respiratory symptoms and a negative COVID-19 test result, the radiation oncologist will decide how to proceed. If the symptoms persist, the patient must wear a surgical mask during treatment.
Planned treatments of symptomatic patients.	Discontinuation of radiotherapy may impair the patient's possibility to recover.	If a patient experiences respiratory symptoms and radiotherapy is scheduled to begin shortly, the radiation oncologist must evaluate the possibility of postponing the start by 15 days. If postponement is not possible, the authorities in charge must be informed immediately and in any case according to the existing regional regulations, in order to obtain a diagnosis in the shortest possible time.
Treatment in progress pending the outcome of COVID-19 test in asymptomatic patients.	Discontinuation of radiotherapy may impair the patient's possibility to recover.	The patient must wear a surgical mask The case must be evaluated by the radiotherapist oncologist. At the onset of symptoms, treatment must be suspended and diagnostic procedures must be activated.
Ongoing treatments in patients who have tested positive for COVID-19.	Discontinuation of radiotherapy may impair the patient's possibility to recover.	Treatment must be suspended pending evaluation by the radiation oncologist and the necessary

		<p>authorization of the local health authorities.</p> <p>If treatment is continued, both healthcare providers and the patient must wear PPE (disposable masks FFP2, disposable gown and disposable gloves).</p> <p>If possible, the treatment should be carried out at the end of the work activity.</p>
Treatments planned in patients who have tested positive for COVID-19.	---	Do not start treatment.
Operator safety when patients have tested non-positive for COVID-19.	Contagion of the staff of a radiotherapy facility would make it difficult to continue treatment.	<p>All healthcare providers must wear masks and gloves when operating less than 2 meters from the non-positive COVID patient. The effectiveness of a surgical mask in preventing transmission to healthcare providers of viral infections via droplets in outpatient settings has recently been documented.</p> <p>In the absence of a triage center at the entrance to the hospital, the presence of possible symptoms must be evaluated in all patients at the entrance to the radiotherapy facility. Helpers cannot access. Patients who are not self-sufficient will be received by the radiotherapy staff.</p> <p>Surfaces that have been touched by patients should be cleaned with disinfectants.</p> <p>Hand hygiene disinfectant gels must be available to the healthcare professionals.</p>
Operator safety in the treatment of patients who have tested positive for COVID-19 or are awaiting confirmation of positive COVID-19 swaps.	Contagion of the staff of a radiotherapy facility would make it difficult to continue the treatments.	If a patient has tested positive for COVID-19 and if discontinuation of treatment is not possible and if the patient's clinical condition allows continuation of therapy with the approval of the local health authorities, both patient and health care providers must wear PPE (a disposable sterile gown, FFP2 mask and disposable gloves).

		<p>The equipment used and the waiting areas must be sanitized according to the methods provided by each individual facility.</p> <p>If possible, it is advisable to carry out the treatment at the end of the work activity.</p>
Non-symptomatic patient safety.	It is advisable to have guidelines for the treatment of patients who are frail because of oncological diseases.	<p>Triage at the entrance to the hospital or the radiotherapy facility. Scrupulous compliance with the hygiene rules.</p> <p>Only the patient can have access to the radiotherapy facility. Possible companions have to wait outside.</p> <p>In the waiting room, the patients must be spaced at least one meter apart</p>
Symptomatic patient safety.	It is advisable to have guidelines for the treatment of patients who are frail because of oncological diseases.	<p>Triage at the entrance to the hospital or the radiotherapy facility</p> <p>The patient must wear a surgical mask and be isolated in a dedicated room.</p> <p>The authorities in charge must be informed immediately and in any case according to the existing regional regulations</p>
Safety of patients who have tested positive for COVID-19 or are awaiting confirmation of positive COVID-19 swap.	It is advisable to have guidelines for the treatment of symptomatic patients who are suspected of or have tested positive for COVID-19, as cancer patients are frail.	<p>If treatment cannot be suspended and after evaluation by the radiation oncologist and the necessary authorization from the local health authorities, the patient must wear disposable protection including FFP2 mask. A protected pathway must be established that does not allow contact with other patients. If possible, treatment should be carried out at the end of the working activity.</p>
Restricted access to the radiotherapy facilities.	Restricted access to the radiotherapy facilities helps to prevent infection from spreading.	<p>Hypofractionated radiation schedules/doses must be evaluated.</p> <p>The radiation oncologist will decide which follow-up examinations can be postponed without damage to the patient.</p> <p>Alternative therapies may be used, especially in case of palliative</p>

		treatments. Radiotherapy should be postponed if this does not impair the patient's prognosis.
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