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REVIEW

An Approach to Cancer Patients in the Covid-19 Pandemic Era

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Abstract

The aim of this article is to give an overview of an approach to cancer patients in the covid-19 pandemic. The treatment recommendations are prioritized as per the risk stratification till the current crisis is mitigated. Measures like telemedicine/telecommunication, triage system, proved to be very effective in prevention of covid contact of cancer patients. Guidelines and protocols are needed that can decrease the risks in cancer management in such pandemic times. Multi-disciplinary work and effective communication between oncology team, critical care and emergency units is the key to optimizing clinical care of cancer patients.

Keywords: Cancer- covid-19- pandemic

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Introduction

Studies conducted across the globe have shown how Covid-19 pandemic has affected the cancer population of different countries. According to the World Health Organization (WHO), 55% of European countries have reported disruptions in cancer services due to Covid-19 pandemic. These disruptions were mainly in the form of suspended screening programmes, delayed diagnosis, deferment of treatment, etc.

As per the results of this study, Covid-19 pandemic had significant impact on various aspects of cancer care viz. identification of new cases, follow-up and mortality. The results of the study show that the identification / registration of new patients had fallen sharply and the reduction was highest in April-2020 compared with the corresponding time period in 2019 and it was more likely due to the limited access to the hospital services. This data is supported by the fact that a study was conducted across 41 cancer centers in India where it was observed that there was 54% reduction in new patient registration (from 112270 to 51760) in 2020 compared to pre-pandemic phase of 2019. In another study, there was 40% drop in the number of new cases compared to the same period of year 2019 in Morocco. One more study conducted in Netherlands showed that the overall cancer diagnosis for all cancer sites fell by 25% from January 2020 to April 2020. Similarly, Belgium witnessed a sharp decline of 50% in new cases registrations in April 2020 compared to the same period in 2019.

Due to the availability of scarce resources, managing cancer patients during the COVID 19 epidemic has proven to be extremely difficult. Therefore, prioritizing the patients according to their disease stage and severity is essential. Since cancer therapy requires a multidisciplinary approach, it's crucial to develop excellent communication across all departments, especially emergency, radiation, surgical, and medical oncology.

The covid-19 pandemic had a catastrophic effect on all sections of health particularly cancer patients. Older age, the prevalence of chronic disorders such cancer, hypertension, diabetes, chronic respiratory diseases, and cardiovascular diseases were all clinical factors that were linked to greater mortality in COVID patients [1,2]. An estimated prevalence of cancer in a cohort of COVID-19 cases was 2% in a pooled meta-analysis [3]. It has also been suggested that the incidence of COVID-19 in cancer patients could be greater than in the general population [4]. Indeed, there is a concern about an immunosuppression status in patients with cancer

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and outcomes in COVID-19, which may increase due to treatments, such as chemotherapy and radiotherapy [4].

Clinical symptoms of COVID-19 in cancer patients are similar as that of the general population. These symptoms are fever, dry cough, fatigue, and dyspnea, although anemia and hypoproteinemia are more frequent in cancer patients [5]. Reports in Chinese patients have described that cancer patients have a 3.5 times higher risk for the need of ICU beds, mechanical ventilation, or death, compared to patients without cancer [6.7]. Moreover, patients who have started chemotherapy or undergone surgery have more severe events (ICU, mechanical ventilation, or death) [7].

Recently, a report published by the Gustave Rossy Institute in 137 patients reported that the Eastern Cooperative Oncology Group (ECOG) performance status, cancer type, and prior cancer therapy can predict the risk of clinical worsening or death in cancer patients with COVID-19. The majority of cancer patients had active/metastatic disease (59%), and the remaining (41%) were in remission or had localized disease. The investigators reported that ECOG performance status > 1 (hazard ratio, HR 4.6), patients with hematologic malignancies (HR 2.7), and patients who received chemotherapy for their disease within the past 3 months had a higher risk for poor clinical outcome. Although prior chemotherapy correlated with a greater chance of clinical deterioration, treatment with immunotherapy or targeted agents in the past 3 months did not [8].

Although there is limited information about outcomes in cancer patients, previous reports suggest a complex scenario. In this line, guidelines and protocols are needed that can decrease the risks in cancer management in these pandemic times. In our hospital we adapted measures like telemedicine in which patients could seek consultation telephonically. Reports and other investigations were received by social networking applications, emails or messages. This mode of treatment proved beneficial not only to patients but to health care workers as well. Also, we divided the medical staff into two teams to be able to maintain the continuity of cancer patient care in case of disability of a provider by covid infection.

Cancer therapies during the pandemic

The present COVID-19 pandemic forces physicians to organize cancer treatment in a dramatically different way in order to cut down on hospital visits, hospitalizations, and immune-related side effects without compromising cancer outcomes. Many facilities and specialists are being ordered to triage patients in this worldwide epidemic because not all cancer patients have the same prognosis or priority for surgery, chemo radiotherapy, or targeted therapy. Many of the suggested triages are determined by consensus among experts or by experience. Triaging becomes a significant part of managing cancer patients in the best way possible as a result of the COVID-19 pandemic. At the same time, it is crucial to lower the danger of COVID-19 exposure for patients and medical professionals. Health care workers must adhere to guidelines and safety procedures when caring for cancer patients in the midst of the present pandemic. Furthermore, patients must receive the appropriate knowledge regarding COVID-19 prevention, protection, and safety.

High priority tumors

Priority should be given to cancers including advanced germ cell tumors, lymphomas, and leukemia's that have a high early mortality rate but a high rate of response. Additionally, tumors with a curative goal, such as cervical, anal, and head and neck cancers, should be given high priority. Delaying treatment in certain situations can lead to very bad outcomes.

Similarly patients where surgery plays the definitive role like gastric cancer, rectal cancer, colon cancer, breast cancer, endometrial cancer need to be given consideration. Some of these cancers which need neo-adjuvant and adjuvant chemotherapy/radiotherapy or both with a substantial benefit need to be given intermediate priority. Oncological emergencies like SVC syndrome, malignant spinal cord compression, Tumor lysis syndrome should be dealt promptly.

Low priority tumors

Patients treated with palliative intent like metastatic cancer should be given low priority. There are metastatic cancers like NSCLC, kidney, and prostate where targeted therapy plays a good role and as such patients need not visit hospitals frequently in this pandemic era.

Adjuvant and neo-adjuvant protocols with chemotherapy and/or radiotherapy have a major role in the treatment of many cancers in different stages. Both treatments have adverse effects that can lead to immunosuppression associated with infections [9]; these should be considered because cancer patients have a higher mortality associated with viral pneumonia due to respiratory viruses, such as par influenza or other non-COVID-19 corona viruses [10]. Additionally, delaying some therapies with a curative intent may lead to adverse outcomes in cancer patients. A decrease in overall survival has been reported among patients with locally advanced breast cancer who had a delayed adjuvant or neo-adjuvant chemotherapy [11-13]. In stage II-III colon cancer, delaying adjuvant chemotherapy was also found to have a worse overall survival [14,15]. Similarly, delayed radiotherapy also has deleterious effects. A study showed that delayed radiotherapy initiation has been associated with a higher local recurrence rate in head and neck cancers and breast cancer [16].

Guidelines

It is necessary to compare the potential benefits and risks of delays in therapy initiation to which the patients are exposed during the current pandemic at the time of planning the administration of therapies. The European Society for Medical Oncology (ESMO) [17] has proposed a 3-tier classification for prioritization of treatment during the COVID-19 pandemic. The high-priority group comprises patients with vital commitment or who could gain a significant improvement in mortality or quality of life with treatment. The medium-priority groups are

non-critical patients, but a delay in starting their therapy beyond 6 weeks could have consequences. Finally, the low-priority group could be treated after the pandemic since the benefit of treatment is marginal. Adoption of these recommendations has been translated to different types and stages of cancer, such as prioritization of radiotherapy treatment in head and neck cancer [18] and lung cancer [19] in this current pandemic by the American Society of Radiation Oncology (ASTRO) and the European Society for Radiotherapy and Oncology (ESTRO). In pandemics, strategies such as triage are necessary. In the categorization process, multiple factors, such as the type of tumor, stage, co morbidities, short-term progression, local material resources, and alternatives to surgery must be considered and discussed in order to allocate a beneficial treatment to oncology patients. In a study [20] almost 20% of the patients' treatment was affected directly or indirectly by the COVID-19 pandemic situation. This in turn may lead to rise in cancer mortality in future. In another study out of 184 patients, 10.9% (20/184) swab results were positive for SARS-CoV-2. With appropriate COVID-19 care and quarantine, 18 patients completed the planned RT. Two died with COVID-19 infection illness and progressive locoregional cancer. We observed no excess acute RT/chemoradiation effects in this group due to infection [21].

Palliative care and COVID

Most cancer patients struggle with pain, which can be problematic. Untreated pain may result in a person's life being of poor quality. Therefore, it's critical to continue cancer pain therapy even when a pandemic situation arises. The adoption of cancer pain management techniques in light of the current pandemic scenario is not discussed in literature. It is important to evaluate any potential biophysiological interactions between various analgesics and COVID 19 infection. Prioritizing patients for hospital visits and urgent interventions, taking special precautions when prescribing high doses of opioids, steroids, and NSAIDS, modifying the dose of palliative radiotherapy, and using telehealth whenever practical for screening, triaging, managing therapies, and providing psycho-social support are just a few of the strategies used for safe and effective management of cancer pain. The urgent need and strong recommendation are for additional high-quality clinical trials and an international collaborative consensus guideline for treating cancer pain.

COVID Impact on cancer treatment

Due to the divergence of resources to treat covid patients and the implementation of lockdown measures, cancer care has deteriorated during the COVID-19 epidemic. Patients with cancer suffer when treatments are postponed. Many patients were unable to come to our treatment facility when it was under national lockdown. Cancer care has been impacted by COVID 19 pandemic control efforts, which have led to illness progression, treatment delays, and psycho-social hardship. The great distance between the patient's home and the hospital and the expensive cost of transportation during the lockdown may have all contributed to the treatment delays. Anxiety about going to the facility that treats COVI patients may lead to psychosocial suffering. Early referrals and the use of shorter radiation sessions have both been used as mitigation strategies where appropriate. With hospital visits becoming more commonplace nowadays, a thorough strategy is needed to offer proper care while also lowering the risk of infection transmission.

COVID and childhood cancer

Pediatric cancer patients are considered one of vulnerable group for Covid-19 infections and its associated complication. In comparison to the general community, paediatric cancer patients are one of the most susceptible populations for COVID-19 infection and the accompanying morbidity & mortality due to their immunocompromised status. According to reports from the Memorial Sloan Kettering Cancer Center and New York Presbyterian Hospital, 7% and 20% of paediatric cancer patients tested positive for COVID-19, respectively [22]. In Madrid, paediatric cancer patients had a 1.3% higher incidence of COVID-19 infection than did the general paediatric population [23]. Case fatality rates for Turkish patients with haematological malignancies were reported to be 13.8% against 6.8% for patients without cancer [24]. Among COVID-19 positive childhood cancer patients' risk of death was significantly higher compared to COVID-19 negative patients and majority of deaths occurred in haematological malignancies receiving intensive chemotherapy. Considering these results thorough strategy is needed to offer proper care to pediatric cancer patients while also lowering the risk of infection transmission.

COVID and radiotherapy

Cancer patients are known to have weakened immune systems, and in almost all cases, delaying treatment can significantly affect both the quality and result. In the modern day, radiotherapy is recognised as one of the key pillars in the management of cancer disorders, and about 50% of cancer patients require radiotherapy in addition to surgery, chemotherapy, immunotherapy, and other forms of treatment. Although the treatment for cancer patients could not be stopped or interrupted in the face of these peculiar conditions, a wave of uncertainty was evident in a covert manner. Therefore, among cancer health professionals involved in the radiation management of cancer patients, a need was noted to record the precise status of several aspects.

COVID and the profession of oncology

We must recognise the enormous sacrifice and voluntarism of COVID soldiers throughout this crisis, many of whom were professional oncologists. Healthcare professionals displayed incredible courage and responsibility by continuing to work throughout the height of the infection caused by this invisible adversary, when there was no cure or vaccine in sight, despite the significant risk they presented to themselves and their families. Healthcare professionals, particularly

those working in COVID hospitals, were shown to be highly burned out. The adoption of personal protection equipment and social isolation was the new standard. All oncologists prioritised the care of their cancer patients. The oncology teams around the world faced a variety of difficulties on all fronts, including staggered staffing, delaying treatments for patients with treatable cancer, sending oncology trainees to the front to fight what appeared to be an unwinnable battle, delaying clinical trials, cancelling or postponing clinical meetings, and others. Our physical separation from our patients as a result of virtual internet consultations caused us to make therapy recommendations based solely on reports without physical examination. Even if few cancer centres were operating with inadequate staff and resources, getting there was a herculean endeavour.

In conclusion, the NCCN [25] and ESMO [17] guidelines propose treatment prioritization in tumors with high early mortality and high response rate to chemotherapy or radiotherapy, such as hematologic malignancies and advanced testicular cancer. In these cases, the early start of cancer therapy can be curative; therefore, these therapies should not be delayed. Intermediate priority cases are neoadjuvant and adjuvant treatments with a high response rate, such as perioperative chemotherapy for gastric cancer, adjuvant treatment for stage III or high-risk stage II colon cancer, or high-risk breast cancer, among others. Systemic therapies in advanced diseases [e.g., immunotherapy for melanoma and high risk kidney cancer, and target therapy in non-small cell lung cancer with driver mutation (EGFR, ALK or ROS1 mutation)] with high response rates are also at this priority level. The initiation of these therapies should be planned by evaluating the risk-benefit balance.

In patients who are on cancer therapies during the pandemic, it is important to minimize their visits to hospitals through the use of telemedicine technologies, which has had very good results [26], especially in terms of quality of life and patient satisfaction [27]. Patients can send the results of their blood tests and computed tomography by email or message, and the medical evaluation is done by streaming, thus minimizing the mobility of patients to the hospital. In addition, telemedicine can be used for communication, counselling, and disease monitoring [28] especially for low-priority symptoms (nausea, constipation, leg swelling, among others). Finally, it is important to define which cancer patients affected with COVID-19 could be prioritized in case of a need for ICU admission. This very complex scenario is very likely to occur in countries where intensive care beds are scarce, especially in developing countries.

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