



# A Comprehensive Evaluation of the Available Data on Cancer Patients and Research During the Covid-19 Epidemic

Shalu Pandey

### Abstract

The new coronavirus, commonly known as SARS-Cov-2 or COVID-19, is now a major healthcare worry for the year 2020 and a global hazard. The emergence of this disease has an immediate impact on cancer research. Chinese studies suggest that COVID-19 problems are more likely to affect cancer patients. Without enough justification or suggestions, many oncologists changed the way they treated cancer patients on a daily basis as a result of this observation. Furthermore, this unique demographic has specific COVID-19 signs and diagnoses.

**Keywords:** Immunotherapy, Tumorthrapy, Radiation oncology, Surgical oncology

### Commentary

In this review article, we discuss the difficulties associated with treating cancer patients who have SARS-CoV-2, as well as the epidemiological, clinical, pathological, and radiological features of the illness and its effects on this population. Finally, we concentrate on cancer treatment methods management combined with an examination of international and national regulations. The new coronavirus, sometimes referred to as SARS-Cov-2 or COVID-19, has emerged as a global health issue. The virus spreads from person to person via respiratory droplets (coughing or sneezing), direct contact with an infected person, or indirect contact with spores in that person's environment. The epidemic has killed 62,773 individuals worldwide since it first appeared in China at the end of 2019 and up until April 5th, 2020. It has harmed more than a million people. It is believed that people with comorbid illnesses are more likely to experience viral infection consequences. Intensive care unit hospitalization, invasive ventilation, or mortality were more likely to occur in cancer patients than in non-cancer patients, according to a recently published Chinese cohort (39% vs 8%,  $p=00003$ ). In addition, public health initiatives that are put in place to stop the spread of disease aim to reduce avoidable hospital admissions and elective treatments. Cancer patients, however, require ongoing care, and receiving diagnostic or therapeutic procedures is not a luxury, whereas their possible exposure to COVID-19 could be extremely dangerous or even fatal.

A remarkable amount of work is put into understanding the unique characteristics of cancer patients who contract the novel coronavirus, overcoming diagnostic and therapeutic obstacles, and

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putting recommendations into practice to safeguard this at-risk population from virus exposure as well as the disease progression brought on by holding off on testing and treatment. Based on a thorough review of the literature, the epidemiological, radiological, and clinical characteristics of adult cancer patients with COVID-19 will be discussed in this article, along with the diagnostic and therapeutic approaches recommended by healthcare professionals and institutions in endemic areas, particularly in China and Italy. Authorities advised severe public health measures to stop the virus' spread when the COVID-19 pandemic was declared. These actions also apply to cancer research facilities, which observed a decline in activity as a result of quarantine procedures, working in shifts, and a scarcity of supplies. Thus, choices about whether to continue or stop trials have to be made by researchers. While experimental research is essential to providing cancer patients with the best care possible, many centres are working to modify their plans and adjust to the new environment without pausing their current work. Furthermore, authoritative bodies like the FDA released guidelines that advise being more flexible with protocols. There have been some steps made, such as remote patient follow-up contact, modifications and exceptions to study protocols, fewer frequent hospital visits and routine follow-up visits, the postponement of new clinical trials, etc.

On the other hand, some cancer research facilities choose to refocus their studies of anti-neoplastic substances on the investigation of possible treatments for COVID-19 infection. For instance, studies conducted in China are evaluating the effectiveness of thalidomide, the myeloma medication bevacizumab, camrelizumab, the PD-1 inhibitor, and other anti-cancer drugs in the management of SARS-CoV-2 infections. The research indicated the potential advantages of further targeted treatments such as afatinib, carfilzomib, and ixazomib.

In this area, numerous other cancer medications are being researched. For instance, it is suggested that kinase inhibitors may reduce the infectiousness of well-known viruses like Ebola and Hepatitis C, indicating that medications like sunitinib and erlotinib may be useful against SARS-CoV-2. Furthermore, to find repurposed medications and potential drug combinations for the treatment of SARS-CoV-2, a team of researchers performed network proximity studies of drug targets and virus-host interactions in the human interactome. Three combinations that all contained at least one anti-cancer drug-sirolimus plus dactinomycin, mercaptopurine plus melatonin, and toremifene plus emodin-were found to be beneficial (an immunosuppressant, an antineoplastic agent and a selective estrogen receptor modulator respectively). It is important to keep in mind the requirement to uphold certain clinical research ethics amid COVID-19's rapid evolution. In fact, The Oncologist's editorial board on medical ethics concentrated on three key factors in cancer research. A patient whose prognosis and wellness depend on experimental treatment and a protocol that he is following should not be abandoned, according to the first rule. The second is making an attempt to reduce any unneeded exposure to a suspicious environment in order to flatten the curve of COVID-19 infection. Finally, they underline the need for the study team's and the patient's psychosocial assistance during the outbreak.

Numerous epidemiological investigations were carried out at the start of the COVID-19 epidemic in China to assess patient characteristics. A subgroup of cancer patients was included in some of these studies. For instance, data from 1099 individuals with laboratory-confirmed COVID-19 until January 29, 2020, were examined by Wei-

Gie Guan et al. They discovered 261 patients (23.7%) had comorbidity in their cohort. Of these patients, only 10 had a history of cancer (0.9% of all patients). Three of these ten patients presented severely upon admission, but the other nine had just minor symptoms. In both of the aforementioned cohorts, there were more patients with severe presentations than with less severe ones, although this finding did not hold true for the subgroup of patients with malignancy. The conclusion that cancer patients typically appear with lesser symptoms than the general population cannot be drawn from these findings, though. The biggest and only prospective cohort to date with an interest in oncology patients was their Chinese cohort. 18 (1%, 95% CI 061-165) of the 1590 COVID-19 cases covered in it had a history of malignancy. This was greater than the 0.29% cancer incidence rate for the entire Chinese population. Lung cancer was the primary malignancy that was most common. Twelve of the 16 patients were in remission at the time of the illness, and four of them had recently undergone surgery or chemotherapy. The average age of cancer patients was 63.12 years, compared to 48.72 years for non-cancer patients. The two groups did not differ in terms of gender.

These data were useful in elucidating the epidemiologic and clinical characteristics of cancer patients during the COVID-19 pandemic. The higher incidence of cancer in this cohort than in the general Chinese population was interpreted as an increased risk for cancer patients to contract COVID-19. Of the 18 patients, only four had an illness that was being actively treated, while the other twelve were in full remission, and the other two had an unclear treatment status. As a result, their infection may have a different aetiology than their malignancy. Our examination of the literature revealed few studies that examine the effects of a SARS-CoV-2 infection on individuals with cancer. However, from cohort studies that included cancer patients, we can draw certain inferences. In research done on 24 critically sick patients in Seattle, it was discovered that while most of these patients had comorbid diseases, none of them had a history of malignancy. Despite the fact that this is a relatively small sample, we can still infer that people with other underlying chronic diseases, such as diabetes or asthma, may be more at risk of developing a serious illness if exposed to the SARS-CoV-2 virus than cancer patients. The first 17 deaths among the initial group of COVID-19 patients in China from 1975 were examined in a study of those patients. Elderly patients (median age 75; range 48 years–89 years) with comorbidities or a history of recent surgery made up the majority of the cases where someone passed away. Only one of the 17 victims had a history of cancer. He had colon cancer in the past and had surgery for it when he was 86 years old.

While the risk of COVID-19 transmission in hospital settings worries every cancer patient and his or her healthcare provider, as the pandemic continues, the risk of disease progression with treatment delay started to become more serious, and the healthcare system's focus on COVID-19 may have negative effects on cancer patients. Numerous experts have written on the urgent necessity for rules to be implemented in order to safeguard cancer patients from getting COVID-19 without hurting them. Most of the tactics used in the absence of uniform recommendations prioritise urgent conditions like acute leukaemia, curative treatments for aggressive diseases, and adjuvant and neoadjuvant therapies while withholding or delaying palliative therapy for patients with poor prognoses. There is also support for telemedicine. Because this has an indirect impact on patient safety, measures to protect medical staff are suggested.

The majority of other Italian-language publications focused more on the surgical than the medical aspects of treating gastrointestinal

and urological malignancies. In the field of urology, one hospital proposed an algorithm to categorise treatments for oncological diseases into non-deferrable (like partial nephrectomy for cT1a renal cell carcinoma or high-risk locally advanced prostate cancer) deferrable (like elective procedures in a low disease burden hospital) semi-non-deferrable (like elective procedures in a low disease burden hospital) and replaceable by other treatments. A group of doctors advises telephone screening of patients for any worrisome symptoms before admitting them for elective procedures, with a low threshold for nasopharyngeal swabs prior to surgery. A change in practice was also observed in gastroenterology. For instance, in several centres across the nation, the majority of elective procedures in colorectal surgery were restricted, but colon cancer surgeries were not included in this plan and continued alongside emergent procedures. Numerous oncology societies and governmental authorities recently put a great deal of effort into putting recommendations into practice to aid practitioners in making decisions about cancer care during the SARS-CoV-2 epidemic. On March 26, a global collaborative group examined the difficulties in providing cancer care and suggested some doable solutions for the management of cancer patients based on the information at hand. International guidelines were released with a few particulars arising from each society's experience as well as common general concepts.

Researchers in haematology are particularly interested in hematopoietic stem cell transplantation due to a number of factors, including the increased risk of infection in neutropenia patients, the risk associated with stem cell donation, transportation, and preservation, as well as the challenge of finding donors who are not subject to travel restrictions. In a case study of a Chinese patient who had cyclosporine treatment. The death of a patient seven months after a bone marrow transplant for AML and who contracted COVID-19 despite receiving adequate care implies that doctors should reevaluate the transplantation procedure during the pandemic.

Despite all the efforts, it is not clear how to best treat cancer patients while also avoiding the threat posed by COVID-19. As we finish drafting this report, more cancer patients are testing positive, certain cancer facilities are overcrowded, and local and federal authorities are releasing new regulations. Every patient's health, every hospital's resources, and every doctor's experience must be taken into account when treating cancer patients. Beyond any scientific conjecture, oncologists must remember that the chance of a COVID-19 outbreak spreading would be larger than the probability of a cancer patient contracting SARS-CoV-2 infection.

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