

# Caring for Cancer Patients during Corona Pandemic—(COVID-19)—A Narrative Review

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## Abstract



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## Keywords

- cancer
- coronavirus
- COVID-19

**Background** Coronavirus disease 2019, the third pandemic of 21st century which has brought the whole world under panic, is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a zoonotic beta coronavirus sharing phylogenetic, genomic similarities with SARS virus and Middle East Respiratory Syndrome virus.

**Specific Concerns** Cancer patients are at double the risk than normal patients since these patients are at immunocompromised state. WHO guidelines advice the patients to plan only emergency hospital visits only till the pandemic persists. Should meet patient/visitors in a well-ventilated room or outdoors and maintain at least 2 m distance between the visitor/patients. It also encourages the patient to refill the prescribed medications in well advance and to stay physically active, if possible.

**Discussion** The World Health Organizations' isolate, trace, test, treat policy needs to be followed to protect these high-risk patients from this global pandemic.

## Introduction

Coronavirus disease 2019 (COVID-19), a new pandemic, is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), a zoonotic beta-coronavirus. This was the third zoonotic coronavirus outbreak in the first two decades of the 21st century that spreads by the human-to-human transmission causing global health concern within a short duration. Based on genome sequencing, 2019 novel coronavirus is about 89% identical to bat SARS-like CoVZXC21, 82% identical to human SARS-CoV, and about 50% to the Middle East Respiratory Syndrome coronavirus (MERS-CoV).<sup>1,2</sup> Scientific advances from the SARS and MERS outbreaks can provide valuable insight into rapid understanding and control measures of the current pandemic.

## Epidemiology

The epidemiological characteristics of SARS-CoV-2, SARS, and MERS have been compared in ►Table 1.<sup>2</sup>

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## Overview of COVID-19 Outbreak

SARS-CoV-2 is a novel coronavirus causing the outbreak of a pandemic viral infectious disease termed as coronavirus disease 2019 (COVID-19). It was first detected in Wuhan, China in December 2019 (Centers for Disease Control and Prevention, March 21, 2020; World Health Organization [WHO], January 12, 2020). Since then, the virus has spread to over 205 countries infecting about 13,47,803 people, of which 74,807 died globally; In India, there are about 4,426 confirmed cases of which 114 deaths were recorded according to WHO by April 7, 2020. These numbers are changing every minute and incidence and mortality figures will be higher subsequently by the time this article is published.

According to WHO, the new coronavirus, SARS-CoV-2 so far has an average R<sub>0</sub> (contagion metric) between 2 and 2.5 which means a person infected with COVID-19 can pass it to more than two people which is higher than seasonal flu (R<sub>0</sub> at 1.3), Influenza A virus subtype H1N1 (R<sub>0</sub> at 1.2 and 1.6), and Ebola (R<sub>0</sub> at 1.6 and 2) but less than SARS (R<sub>0</sub> at 4) and MERS (R<sub>0</sub> at 2.5 and 7.2).<sup>16</sup>

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**Table 1** Epidemiology characteristics of COVID-19, severe acute respiratory syndrome, and middle-east respiratory syndrome

	COVID-19	SARS	MERS
Origin location	Wuhan, China	Gaungdong, China	Jeddah, Saudi Arabia
Total cases	12, 79, 722 <sup>+3</sup>	8,096	2,229
Total deaths	72, 614 <sup>+3</sup>	774	79
Health care worker cases (%)	3.8	21	18.6
Reproductive number	3.28 <sup>2</sup>	3.0 <sup>4</sup>	<1.0 <sup>5</sup>
Incubation period (days)	4.75–6.4 <sup>6</sup>	4.0 <sup>7</sup>	4.5–5.2 <sup>8</sup>
Serial interval (days)	2.6–7.5 <sup>9</sup>	8.4 <sup>10</sup>	12.6 <sup>11</sup>
CFR (%)	3.85 <sup>2,12</sup>	9.6 <sup>13</sup>	35.5 <sup>14</sup>
CFR with co morbidities (%)	73.3 <sup>12</sup>	46.0 <sup>15</sup>	60 <sup>15</sup>

Abbreviations: CFR, case-fatality rate; COVID-19, coronavirus disease 2019; MERS, Middle East respiratory syndrome; SARS, severe acute respiratory syndrome.

## Oncological Determinants of COVID-19

Cancer patients are at higher risk since that these patients are more susceptible to SARS CoV-2 virus causing COVID-19, than individuals without cancer. These individuals are in an immunosuppressive state caused by malignancy and anti-cancer treatments, such as chemotherapy, targeted therapy, and immunotherapy. National Health Service, England warned that certain groups are particularly vulnerable to serious illness if they are infected with SARS-CoV-2. These groups include individuals who are undergoing active chemotherapy or radical radiotherapy for lung carcinoma and cancer of blood or bone marrow. Blood cancers often directly compromise the immune system, so patients are at high risk compared to other active cancer patients. In patients with lung carcinoma with prior history of smoking, data have shown that in smokers, there is an increased gene expression of angiotensin-converting enzyme 2, the binding receptor for SARS CoV-2 due to significant tobacco consumption; and hence smokers are more susceptible to COVID-19 compared to nonsmokers. According to an analysis of Italian patients published in March 2020, 20% of the total patients who died from COVID-19 disease in Italy had active cancer.<sup>17</sup>

As per the report of the WHO–China Joint Mission on COVID-19, cancer patients had an estimated twofold increased risk of COVID-19 than the general population. The study results suggested that hospital visits were a likely contributing factor to the increased incidence in cancer patients. The potential risk factors of older age, comorbidities, and smoking history could help oncologists to identify patients with poor prognosis at an early stage.<sup>18</sup> A study by Cai et al, suggests that patients of COVID-19 included in the study had preexisting conditions including diabetes (6.4%), hypertension (12.8%), cardiovascular diseases (3.7%), liver diseases (2.7%), malignancy (1.4%), and others (3.7%).<sup>19</sup>

## Prevention of COVID in Patients with Cancers

Precautions to prevent spread of SARS-Cov-2 in cancer patients must be the priority since that these patients are at increased risk than the normal population. Cancer patients

must be thoroughly counseled about the signs and symptoms and need to approach the doctor if any of the symptoms appear, train about social distancing, and the need of the use of masks to protect themselves. The patient must continue their treatment unless they are in close contact with the patient with COVID-19 or relative symptoms. A comprehensive work-up should be performed in patients when they present with fever or other symptoms related to infections of COVID-19 as there is no specific guidance about COVID-19 testing in cancer patients.

- Elective surgeries/radiotherapy/immunosuppressive therapy/planned stem cell transplantation should be rescheduled or modified by the oncologist, keeping an individualized risk/benefit assessment in mind.
- In posttransplant patients, extra care and restriction of visitors must be encouraged to avoid the potential exposure.
- Cancer patients on regular follow-up can avoid hospital visits and potentially resort to telemedicine in case of need.

## General Protection Steps for Cancer Patients and Cancer Care Delivery Challenges among COVID As Suggested by WHO March 20, 2020<sup>20</sup>

- Handwashing with alcohol-based hand rub or soap and water.
- Cover mouth with a tissue while coughing and sneezing, dispose of the tissue, and wash hands.
- Avoid frequent touching face with unclean hands.
- Regular cleaning and disinfection of frequently touched objects and surfaces.
- Avoiding close contact with people—keep more than 1 m distance between you and others.
- Avoid crowded spaces, especially less ventilated areas and indoors.
- Avoid contact with anyone who is ill with a cough, fever, or difficulty in breathing.
- Do not share objects that touch your mouth—such as cups, spoons, bottles.
- Do not shake hands. Practice social distancing.

## Added Protection to Be Taken in Cancer Patients by Care Givers

As per WHO guidelines,<sup>20</sup> advice the patients to plan hospital visit only in case of an emergency and avoid routine consultations in person till the pandemic persists.

- Should meet patient/visitors in a well-ventilated room or outdoors.
- Should maintain at least 2 m distance between the visitor/patients.
- Encourage the patient to refill the prescribed medications in well advance.
- Advice the patient to stay physically active, if possible.

## Discussion

COVID-19, the new pandemic, is the major health concern in the world right now. Many countries even the one with the best medical facilities are having a tough time managing the pandemic and keeping their citizens safe. The biggest concern at this moment for any country is to avoid the spread of the disease and limit the mortality since that the treatment protocols are yet at the level of trails and no proven treatment has been formulated. At this juncture, every country is striving to adopt WHO isolate, test, treat, and trace policy,<sup>21</sup> where countries must isolate, test, treat, and trace to avoid the resurfacing of epidemic once the restrictions are lifted.

As discussed, cancer patients are at high risk due to their prior immunosuppressive state and other comorbidities causing them to be more susceptible to the on-going disease. Surviving this pandemic needs a combined effort from the patient and the caregiver to avoid the patient from being exposed to the infective environment. The caregivers and patients should observe that these patients at higher risk should isolate themselves from unnecessary exposure, do fact checks from the myths circulating on social media (→Table 2),<sup>22</sup> and maintain proper hygiene habits following WHO guidelines; test/seek doctors attention only if they are exposed to COVID-19—positive/suspected patient and are symptomatic.

## Conclusion

Today, the world has turned into a global village where each country is interdependent, and these pandemics remind us time after time that we need to self-assess our interventions, whether they are relevant to changing environment and present scenario. It is time for everyone to think globally and act locally to ensure that the interventions are appropriate and right in actions such that this globe remains sustainable for centuries to come.

### Funding

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### Conflicts of Interest

There are no conflicts of interest.

**Table 2** Myths and facts regarding coronavirus disease 2019 circulating on social media

Myths/ misinformation	Facts
Only older patients are at risk of COVID-19.	People with age >60 y with preexisting conditions such as diabetes, heart problems are more vulnerable, but young people can also get infected.
Spraying alcohol or chlorine kills the coronavirus.	Though these are used as disinfectants, spraying these on skin would not kill the virus.
Drinking huge amounts of water flushes out coronavirus.	There is no scientific evidence as such to prove the statement.
Thermal scanners can detect early coronavirus infection.	Thermal scanners are effective in measuring skin temperatures to detect fever, an early symptom of COVID-19 but not for COVID-19 screening.
Specific medicine use in the treatment or prevention of coronavirus.	There is no proven medicine that can prevent or provide any specific treatment for virus infection.
Vaccines against pneumonia can protect against coronavirus infection.	The vaccine against pneumonia (pneumococcal and <i>Hemophilus influenzae</i> B vaccine) does not provide any protection against SARS-CoV-2.

Abbreviations: COVID-19, coronavirus disease 2019; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

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