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Turbulence of battling with cancer during a pandemic: A study on the impact of covid-19 on cancer care

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Abstract

Since the outbreak of COVID-19, dealing with cancer has got impeccably challenging and traumatizing both for the patients and their caregivers. The pandemic caused a hostile impact on the mental well-being of millions of people around the world. More so among those with cancer patients with their compromised immune systems as they are more prone to infections. Even visiting a hospital is fraught with consequences if one has cancer. With this situation, not only treatments have been interrupted, operations and therapies postponed, but also cancer screening have ground to a halt. Those patients with advanced and recurrent cancers have often found themselves abandoned midstream. According to the National Institute of Cancer Prevention and Research, about 2.25 million individuals are living with cancer in India, alone. With the daily struggle to bring the covid-19 virus under control and in the process to find solutions, led many people waiting to do their early diagnosis, for consultations, an operation or even for therapy. Therefore, with the uncertainty, came along high levels of anxiety, fear, isolation, paranoia and emotional distress hampering the mental well-being of the cancer patients because of their already compromised immune systems

Purpose: This exploratory paper aims to examine the literature on the impact of COVID-19 on the cancer patients.

Design/Methodology/Approach: A literature search was carried out in recently published articles to locate literature relating to COVID-19 and its impact on cancer care in India and internationally. This included the steps taken to curb the gaps in utilization of cancer care services and to gain an insight on the access of care and disruption of treatment journeys.

Findings: The findings suggest that the spread of COVID-19 gave rise to a huge backlog of patients of cancer who needed urgent care. The findings highlighted the tumultuous condition of the Indian healthcare system which spends only 1.28 percent of its GDP in health infrastructure and the fact that each individual cancer patient has a separate disease status, age, frailty, and comorbidities which should be maintained, as well as the potential of alternative strategies of care delivery. Moreover, the use of telemedicine is at a great process in the west with large positive experiences from both the doctors and the patients, which also should be carried out in India considering the ongoing pandemic and the vast majority of cancer patients across the country.

Keywords: cancer, covid-19, oncology, pandemic, patients

Introduction

The coronavirus disease (COVID-19) is a respiratory disease caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) which is spread exponentially by human-to-human transmission^[1]. It was first detected in Wuhan, China, in December 2019 and since then it has spread across 216 countries and territories. Since the beginning of this virus, the delivery of cancer care has been challenging worldwide. Cancer patients are reportedly twice more likely to be infected than the general population due to their systemic immune-compromised state caused by the malignancy and anticancer treatments^[2, 3]. From hand hygiene stations and social distancing measures to the rapid expansion of telehealth and suspension or delay of clinical trial activities^[4], COVID-19 has fundamentally reshaped oncology practice at almost every stage possible^[5].

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On 24th March 2020, the Government of India declared a nationwide lockdown amidst fear of spurt in Coronavirus Disease (COVID-19) contagion [6]. This decision was made to 'flatten the curve', delay the rise of COVID 19 related illness, buy time to improve health infrastructure and build COVID care facilities. Many apex multi-speciality hospitals, including few cancer care delivery centres were turned to exclusive 'COVID 19 facilities' [7]. This rationing of services diverted important resources from other illness including cancer care. This problem was further aggravated by the intermittent disruption of care in running facilities whenever patients or healthcare workers turned COVID positive. The cancer care delivery system is one of the worst affected health sectors, especially in developing countries such as India, where 95% of cancer centres are situated in urban areas, while 70% of the population lives in the rural areas [11]. Thus, cancer patients are bound to move from villages to big cities or different states to get appropriate treatment, which is nearly impossible now due to the travel restrictions and countrywide lockdowns implemented. Presently, there are approximately more than 4.5 million patients with cancer in India, who are either in follow-up or different stages of treatment. In India, there are over 1.5 million new cancer patients registered every year and approximately 780,000 die from cancer, making cancer the second leading cause of death after cardiovascular diseases [11]. Although, there are many cancers which are curable with treatment, but with the nationwide lockdown, it brought uncertainty to the survival of such patients due to the inaccessibility of treatment. Treatment delays have been attributed to many factors, and it is difficult to predict the time when treatment delivery will return to normalcy [12].

In Cancer care, nearly 70% of patients could not have access to life-saving surgeries and treatment. Along with that, chemotherapy treatments and follow-ups were postponed [8-9]. Even private clinics in major Indian cities reported a nearly 50% decrease in patient footfall for cancer care and diabetes in comparison to the numbers they saw earlier [10]. Altogether, cancer services declined by 50% in April and May, as compared with the same period the year before (data from leading private cancer hospitals across India). On one hand, hospitals were struggling with the increased burden of patients with COVID-19, and, on the other, management of the backlog cases created a barrier for them. In such situations, hospitals not only needed to take precautionary measures (wearing personal protective equipment), but also required to follow minimalistic rules (e.g., reducing the number of attendants with each patient, reducing the number of visitors for inpatients, and using online or telephonic routes for routine follow-up). They also need to protect the vulnerable forefront health-care providers, maintain supply chains, and conduct triaging of patients based on several categories. And while doing all these tasks, they need to protect the front-line health-care workers from COVID-19.

Cancer care requires a multimodal approach, and radiotherapy is an essential component of it. Based on the study by Möller *et al.*, around half of the diagnosed cancer cases required radiotherapy treatment in one form or another [13]. In India, many government-run medical colleges and private hospitals provide cancer care facilities and the general population mostly prefer receiving cancer treatments in government institutions where these are either free or subsidized, whereas private hospital services are accessed

by patients who can afford their own treatment expenses or have insurance or other certain coverages. Cancer care delivery has further been slowed down due to the diversion of resources toward tackling COVID-19 in many government institutions by changing cancer hospitals into dedicated COVID-19 hospitals and posting staffs to specifically work for COVID-19 patients. In such circumstances, when resources are directed towards the care of COVID-19 patients, it is very difficult for the general population to start or continue their cancer treatment in private hospitals, which is beyond their financial means. The available workforce has not been adequate enough, due to lack of trainees specializing in oncology, in meeting the demands associated with the rising number of cancer cases. Therefore, this pandemic has also further broadened the inequality and the disparity gaps in cancer care delivery related with inadequate cancer care infrastructure that cannot handle the current cancer burden. Various barriers such as long-distance traveling to receive cancer care, accumulation of cancer patients, and the already strained health-care system will contribute to delayed diagnosis and treatment [14].

The pandemic has also severely affected the clinical trials in oncology. According to a recent publication by Upadhya *et al.* (2020), there was a significant impact on enrolment with only 1/5th of institutions continuing enrolment [15]. Waterhouse *et al.* (2020) also showed, 54.8% decrease in patient visits due to the unwillingness or the patient's ability to be present at the hospital due to various reasons [16]. Patient care was the major concern along with the staff safety. There were limitations in continuing radiology and laboratory services as important services were diverted for COVID-19 management. The trial deviations were also discussed by almost half of the investigators [16]. Decreased and missing patients visit has impacted the data collection and will surely have a great impact on the final result of the trials. It will also adversely affect the patient outcome due to missing interventions; be it radiotherapy, surgery or chemotherapy; leading to upstaging of the disease. As such, the quality of life will also be impacted as the health care facilities are being burdened with COVID-19 leading to allocation or transfer of medical personnel and resources to take care of the COVID -19 patients [17]. The overall situation has led to the reduction to access of cancer patients both for the curative and palliative services. The gap in patient evaluation or visits will lead to more investigations for assessment of disease at the time of next visit, thus leading to increase in the total cost. The effect is more prominent in studies which are directed towards the treatment for advanced cancer where survival is only for few months [17]. There have also been reports regarding the suspension of about 200 oncology trials in the month of March and April in 2020, reflecting the concerns regarding feasibility of oncology trials [16]. Given previous pandemic histories and the likelihood of a second wave of COVID-19, further restrictions and resolutions on movements and ways of cancer care is yet to be imposed. This paper examines the impact of COVID-19 on the cancer care in India as well as internationally. It explores the existing literature available on this and how services and guidelines are responding in safeguarding the lives of cancer patients.

Methodology

A search was carried out for recent publications (research papers, articles, news, government guidelines and law) to locate relevant literature that describes the existing knowledge base and gaps in practice and areas that require further exploration. In the following section, we will look into the various impact and the changes that COVID-19 brought into oncology care.

The Psychological Impact of Covid-19 On Cancer Patients

The diagnosis of cancer, for most people marks as a sentinel event in theirs and their family for life. But today where we are living, these are no longer ordinary times. A pandemic like COVID-19, is a once in a century event for which no amount of planning can be enough to overcome the obstacles to optimum health care delivery. The COVID-19 pandemic emerged as a global health problem putting a halt to our lives and the way we were living. The landscape of coronavirus continues to change rapidly with the entire world succumbed to the deadly virus. The infection is very contagious, with a high rate of person-person transmission [18]. This led to strict quarantine measures and social distancing practices across the world. In other words, the 2020 year has been a tough whirlwind year, particularly for those living with cancer and their care givers.

Patients with cancer are a unique group with continuous need to access health care for life-sustaining cancer treatment thus, delay in their treatment could be extremely detrimental to patients [19]. In view of the ongoing pandemic, patients with cancer are forced to choose between seeking treatment and increasing the risk of contracting COVID-19 or postponing therapy for minimizing the risk of contracting COVID-19 [20], leaving them in a dilemma. During this pandemic, one of the key policies to reduce the spread of COVID-19 is to maintain social distancing – which seems to be a challenge for the patients with cancer. The diagnosis of cancer itself, results in numerous psychological burdens for the patients and their caregivers. Social support plays a major role against these psychological symptoms [21], and acts as a protective factor against physical morbidity and mortality [22]. In that case, interpersonal relationships and physical presence of family is very vital for their healthy mental state. Thus, the effect of quarantine and social isolation for cancer patients proved to be a major bump in the road in their mental health.

Since the pandemic hit, there have been plenty of research endeavours on cancer and COVID-19, such as the immunocompromised patients with cancer [23], cancer care management [24], hospital hygiene [25] and none or very less has been focused on this disconnect and limping impact on mental health and emotional health well-being. This in a way, points out the fact that how mental health and emotional well-being of patients with cancer are underreported and unexplored worldwide.

During the pandemic, emotional distress in cancer patients have increased due to poorly controlled symptoms for lack of access to symptom control services and treatment. Lack of access to mental health professionals and proper treatment for patients with pre-existing mental health conditions have been a tough road during the lockdown. With limited access to cancer treatment, uncertainties regarding the course of treatment, curtailment of care, progression of disease and premature death have increased

anxiety and distress among the patients and their caregivers. Even with cancer services, the risk of contracting COVID infection with a background of immunocompromised state is quite disturbing and stressful. In general, the estimated prevalence of psychosocial distress for cancer patients is between 35% and 55% [26] and with the pandemic on the run, this rate has seemed to only increase. The International Psycho-Oncology Society highly recommends the routine screening of emotional distress and integrating psychosocial care into routine cancer care [26]. The provision of psychosocial support and care is essential in decreasing the levels of stress, anxiety, depression in cancer patients [26]. With the pandemic going on, most hospitals are running on the bare minimum of staff to function making it no longer possible for a trained psychiatrist or social worker to provide counselling to every patient. This provides an opportunity and need to train clinicians in the largely neglected field of psycho-oncology, which has been proven to have a great impact on both patients and their families, resulting in the better quality of life both during and after treatment [27]. Counselling is the backbone of psycho-oncology, a skill that surprisingly very few clinicians are trained to deliver [28], considering the amount of increased cancer cases in the past decade. Counselling is of paramount importance not only to patients who have exhausted all options of treatment, but also plays an important role equally today in cancer survivors. Providing reassurance, provision of coping strategies and proper guidance to education to guide patients through endless stream of misinformation, unknowingly goes a long way in rehabilitation. Training more psycho-oncologists in the basics of counselling will let the patients to normalize various emotions such as grief, anger and regret empowering them to take better control of their lives. The traditional forms of psychosocial support involving support groups should be reinvented, and with the new COVID-19 infection control practices and social distancing norms, group therapy should be considered delivering through conference calls.

Cancer patients are less likely to receive treatment during the pandemic due to the recommendations from many bodies, including ASCO, because of the estimated risk of infection outweighing the benefit. Most of the centres have categorized palliative intent patients with low or no survival benefit and as low priority, choosing to not triage limited resources available in this pandemic situation [29]. These changes that the covid-19 has brought with it has an enduring impact on the patients with pre-existing conditions. As such, psycho-oncology must seek alternative ways to identify the patients in need, and to whom those services could be provided during these unprecedented times and also beyond. Health care providers must remember that the present condition of healthcare facilities and resources towards covid-19 has increased anxiety and confusion among the people with cancer. Now more than ever, these patients need individualized care and reassurance. This might also be an opportunity too to be more truthful in the way we communicate news about cancer. Although, clinics around the world have pushed to rapidly re-engineer how they plan to support their patients and help them manage their emotional well-being, yet there is a long way to go. Cancer therapies are of proven benefit, but in light of the serious consequences due to COVID-19 infection, the risk-to-benefit considerations are getting increasingly important.

For every individual patient, the status of their disease, age, comorbidities (30) and frailty should be considered, as well as potential alternative strategies for care delivery. Moreover, the psychological impact of not only cancer, but also of the increased social distancing and shielding measures that many patients face, requires considerations too. Patient support groups online and the access to supportive and more formal psychological help needs to be planned more accordingly and should be made accessible. Health care providers, undoubtedly are constantly evolving and implementing various technologies to improve patient safety. Some of these measures include teleconsultation facility, development of web applications to track patient records and investigation reports home collection blood samples and creation of patient pathways to minimize unnecessary contact and to ensure seamless and safe health care delivery.

Although a pandemic has and will lead to major disruptions in every aspect of life, it should not necessarily mean that treatment of other diseases like cancer has to come to a standstill.

Impact of Covid-19 On the Cancer Care Services

In the current COVID-19 pandemic, patients with cancer are considered as the most vulnerable group. The increased rate of susceptibility is because of their severe systemic immune suppressive state due to varied anticancer treatment modalities. The alarming widespread nature of the infection raises the concern of its influence on patients with cancer. Thus, the needs of patients with cancer and the workforce and staff caring for them are currently at the forefront of our attention and action. The very first literature on incidence of COVID-19 in cancer patients comes from a study in Wuhan, China, where 0.79% (12 patients) of the 1524 cancer patients admitted showed infection between 2019 December to 2020 February (31). As compared with the collective prevalence in the community (0.37%), the rate of contagion was high and thus this report holds limitations in not addressing the COVID-19 incidence amid community outpatients with cancer. Another study from Italy reports 20% of the deaths from COVID-19 contagion in patients with cancer (32). According to various reports, patients with cancer have known to acquire the COVID-19 infection on getting anti-cancer treatment during hospitalization, which supports the susceptibility of cancer patients in the existing pandemic.

The need to divert healthcare workforce, staff and resources to address the pandemic has ultimately resulted in the suspension of cancer screening programs for asymptomatic patients in various countries. In March 2020, the Welsh government [33] and the Scottish government [34] suspended several screening programs for breast, cervical and bowel cancer. In April, the Northern Ireland government followed [35] with England yet to formally announce they are suspending screening. In the USA, the Centres for Medicare & Medicaid Services have classified cancer screening as a low-priority service and suggested healthcare organizations consider postponing screenings [36]. In response to the early surge of COVID-19 cases, cancer screening programmes were suspended in Morocco [37-38]. A similar situation was reported In Uganda, where due to nation-wide COVID-19 movement restrictions and social distancing measures, led to the suspension of cancer screening services and awareness outreach programmes [39]. Moreover, patients have been

fearful of exposure to SARS-CoV-2 and of overburdening healthcare services, thus have been less likely to present to healthcare services for cancer screening and diagnosis. This impact is expected to be more remarkable in low-resource settings and developing countries like India, due to inadequate policies for infection control and resource constraints in the provision of PPE and delivery of cancer screening and diagnostic services. Delays in cancer diagnosis or treatment have the high-risk possibility to worsen patient outcomes, including the increased likelihood of late diagnosis, metastatic disease, tumour progression from being curable to non-curable diseases; all of which affect patients' overall survival [40-41].

The pandemic has affected the capacity for surgery has been reduced due to lack of theater space and ventilators have been used to provide additional critical care capacity for patients with COVID-19. Moreover, there have been reports of patients developing COVID-19 after admission to hospital for elective surgery which have resulted in patients' being more reluctant to have surgery. As a result, many centres have been using radiotherapy or hormonal therapy, neoadjuvant chemotherapy as therapeutic modalities while surgeries are being delayed. However, these are risky and difficult decisions that would involve a risk of disease progression or emergency admissions with complications. To help clinicians and oncologists in navigating this complex decision-making process, relevant clinical societies and associations in many countries have issued guidance on this. For example, the American College of Surgeons has recommended that in the early stages of the pandemic, semi-elective surgery, such as for nearly obstructing colon cancers, stenting for oesophageal cancers and most gynaecological cancers, should continue [42]. As a direct consequence of these sudden changes, services are being reorganized to address a growing backlog of semi-elective cancer operations in many countries. For instance, NHS England is consolidating cancer surgery in cancer hubs kept as free as possible from SARS-CoV-2 exposure [43]. In addition, measures should be taken for services to be delivered by a designated pool of staff to reduce the risk of exposing SARS-CoV-2-free patients and healthcare workers to the virus.

With the advent of COVID-19, the role of Radiotherapy has expanded to new lengths as it is often being used to replace or to delay other treatment modalities with higher infection risk. In general, Radiotherapy always had a major role in cancer both as a palliative therapy and curative therapy. For instance, an international panel of experts has recommended that a short course of radiotherapy can be used to delay surgery in patients with rectal cancer [44]. Moreover, according to reports from China and Italy have indicated that strict infection prevention and control measures, including the screening and testing of patients, can allow radiotherapy services to continue relatively uninterrupted throughout the pandemic [45-46]. However, with the increasing demand, the courses of radiotherapy may need to be rationed. The pandemic has also severely affected the systemic treatment options for the cancer patients as chemotherapy may expose patients to a higher risk of becoming infected and leading to worse outcomes, if they develop COVID-19. Although, the risk associated with biologic and monoclonal-antibody therapies is less clear, as some of them may be beneficial in combating the inflammatory storm seen in COVID-19 [47].

The COVID-19 pandemic has apparently changed the health-care operations around the world and has interrupted the standards of clinical practices as well as created clinical research challenges for cancer patients. To limit the risk of viral transmission, many research centers enacted policies and limited the number of lab workers allowed on-site, putting many studies on hold. For the most part, research projects funded by government appropriations have not been hobbled by the pandemic, but some of the projects supported by private philanthropy have been facing a funding gap. COVID-19 has also drastically decreased the donations to cancer-focused philanthropic organizations. The American Cancer Society, for example, expects a \$200 million decrease in donations the 2020 year and has not been able to accept applications for research grants for the Fall grant cycle either. Clinical cancer research, in which potential new therapies are mostly tested in patients, has also experienced difficulties as a result of COVID-19. Some cancer centers halted the enrolments on clinical trials entirely during the height of the pandemic. A survey of dozens of clinical investigators in March found that nearly 60% of respondents had halted screening and/or enrolment in certain trials, and that half of their institutions had ceased collection of blood and other tissue for research purposes. Overall, the amount of cancer specific research, publications and new clinical trials is expected to significantly decrease in the short- and long-term due to the pandemic ^[48].

The estimated decrease in cancer funding in India ranges from about 5% - 100%, as several funding agencies have cancelled calls for funding. The private or charity sector is the worst hit, with an estimated decrease of around more than 60% of its funding ^[49]. This raises a serious concern for cancer researchers, and that this debacle has the potential to topple many advancements in cancer research. With most conferences and official meetings happening online due to travel restriction, the chances of learning and physical interactions with experts have been reduced, if not vanished.

Ways Forward: Strategies And Approaches

There is no doubt that the current pandemic that we are in has incurred adverse effects on every aspects of cancer care and has negatively affected the patients' overall outcome. These patients are at the verge of facing threats of delayed cancer treatment and vulnerability to COVID-19. Considering the strategies adopted in other countries to curb this oncology threat, could also be used in India to improve the cancer care systems during the pandemic and beyond. These include ensuring proper supply of protective equipment and medication, individualized treatment of cancer that balances the risks of disease infection and progression, educating the patients regarding the preventive measures along with the signs and symptoms of COVID-19, continuous screening policies for cancer patients, encouraging telemedicine to decrease hospital visits and social distancing measures in treatment facilities. There is anecdotal evidence of a lesser degree of tele-health engagement among our older, rural and minority patients, and also among patients with whom language is an issue. Data should also be collected for all COVID-19-positive patients to help better understanding of the disease and its impact in the Indian context. Specific measures should be implemented to ensure proper utilization of limited health-care resources during this crisis.

Following strict COVID-19 preventive measures, the cancer programs should continue offering cancer diagnostic and screening services. In order to catch up on missed screening opportunities, people visiting health care facilities for other health reasons should be offered age and gender appropriate cancer screening and early diagnostic services. While implementing and carrying out the phased return of cancer treatment services, certain movement restrictions may restrain the patient's referral to facilities offering the highest level of care at that time period. Hence, facilities that do not have radiotherapy services should consider lower-level treatment options like the chemotherapy, pending the feasibility of access to higher-level oncology centres (50). It has also been recommended that various regions should consider organizing designated cancer treatment centres to start operating on a high volume of oncology cases. Moreover, coordinated monitoring systems have been recommended for successful execution of outstanding cancer screening, diagnosis and treatment cases. Such systems will help to facilitate the triage and transfer of patients to centres with the greatest capacity on demand for oncology services surge as movement restrictions are scaled down ^[51].

In planning for long-term management strategy, the facilities should strengthen the management of COVID-19 whilst avoiding the ignorance towards cancer care treatment. Due to the pandemic, cancer care delivery has come to a halt in many institutions across the world which is affecting the outcomes of cancer patients. Once these institutions start working normally, they will witness an overcrowding of patients which may adversely affect the delivery system. Therefore, cancer care facilities of government, semi-government and private set-ups would require careful execution and planning for post-pandemic cancer delivery to guarantee the smooth functioning of the patients who are already stressed by the disease. In order, for the patients to receive treatment at home or in a district hospital, excellent nursing care would be required to keep the patients safe, comfortable and for the management of any adverse reactions during the treatments ^[52]. There is also an imminent need to establish more and strengthen the existing government-run cancer centres to ensure uninterrupted and affordable treatment near the patients' home during the times of crisis and afterwards as well.

During the pandemic, remote/virtual consultations were set up by many oncologists with their patients which has helped the medical systems to offer timely consultation and reduce the risks of infection while dealing with limited amount of hospital resources. Thus, the need of the hour is to invest in technologies which can facilitate timely, evidence-based care like the smart ICU's, for instance, which can help prevent infections, facilitate early detection of organ failures and timely resuscitation of the patients. Moreover, a digital ecosystem should be established as it is easier to bring together medical experts and specialists in real-time for an effective exchange of ideas and discussions which is why it becomes especially essential when a patient's medical condition such as cancer, demands that doctors from different specialties come together to chalk out a cohesive treatment plan.

In this COVID-19 era, telemedicine has started to play a more crucial role in the care of oncology patients. The WHO and American Telemedicine Association define telemedicine as the use of electronic communications and

information technologies in the delivery of clinical services over a distance [53]. The application of Telemedicine in oncology is referred to as tele-oncology and is used to advance cancer care. Tele-oncology offers a very innovative and effective solution to the present problem of cancer patients during these uncertain times and thus, there is an increasing inclination for hospitals to utilize tele-health in cancer care with patient appointments being transferred to phone consultations keeping in mind the risk-benefit ratio [54]. This as a result, has decreased the need for cancer patients to visit hospitals during a time when they have a high risk of death due to the SARS-CoV-2 infection which can be contracted in hospitals [55]. Thus, tele-oncology has taken on a more prominent role in the care of cancer patients across the world. Telemedicine in cancer care has tremendous potential during and after the COVID-19 era. The widening of collaborations in the field of oncology has helped researchers as they are now studying the outcomes of patients that are currently receiving altered schedules for their cancer treatment. This will further help detect cohorts that may benefit from altered treatment protocols [56].

Conclusion

The outbreak of COVID-19 has caused a panic worldwide. There is no such evidence that proves the possible treatment approach of cancer patients due to the insufficiency and lack of knowledge and work. Also due to the lack of enough data, it is difficult to make management decisions. Currently the most challenging part is delaying cancer treatment, especially patients with COVID-19 infection. The clinicians should take all the care and report proper case reports of COVID-19 in patients with malignant co-morbidities. With the growing number of cases worldwide, it is crucial that more research is performed to understand the implications of this virus with regards to anti-cancer therapies and that the health organisations consider alternative methods to deal and tackle with the backlog of semi-elective surgeries, such as “Cancer hubs”, so that cancer patients can continue to receive the best evidence informed treatments.

References

- Liang W, Guan W, Chen R, Wang W, Li J, Xu K *et al.* Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *The Lancet Oncology* 2020;03;21(3):335-337. [https://doi.org/10.1016/s1470-2045\(20\)30096-6](https://doi.org/10.1016/s1470-2045(20)30096-6)
- Shankar A, Saini D, Roy S, Mosavi Jarrahi A, Chakraborty A, Bharti SJ *et al.* Cancer Care Delivery Challenges Amidst Coronavirus Disease – 19 (COVID-19) Outbreak: Specific Precautions for Cancer Patients and Cancer Care Providers to Prevent Spread. *Asian Pacific Journal of Cancer Prevention* 2020;21(3):569-573. <https://doi.org/10.31557/apjcp.2020.21.3.569>
- Shankar A, Saini D, Bhandari R, Bharati S, Kumar S, Yadav G *et al.* Lung cancer management challenges amidst COVID-19 pandemic: hope lives here. *Lung Cancer Manag* 2020;10.2217/lmt-020-0012.
- Tan AC, Ashley DM, Khasraw M. Adapting to a pandemic: conducting oncology trials during the SARS-CoV-2 pandemic. *Clin Cancer Res* 2020;26:3100-3. Abstract/FREE Full Text/Google Scholar
- Ueda M, Martins R, Hendrie PC, McDonne IIT, Crews JR, Wong TL *et al.* Managing cancer care during the COVID-19 pandemic. *J Natl Compr Canc Netw* 2020;18:366-9. CrossRefPubMedGoogle Scholar
- Government of India issues Orders prescribing lockdown for containment of COVID-19 Epidemic in the country. Press Information Bureau. Government of India. Available at https://www.mha.gov.in/sites/default/files/PR_National_Lockdown_26032020_0.pdf. Last assessed on 26th August 2020.
- Guidance document on appropriate management of suspect/confirmed cases of COVID-19 Ministry of Health & Family Welfare Directorate General of Health Services. Available at <https://www.mohfw.gov.in/pdf/FinalGuidanceonManagementofCovidcasesversion2.pdf>. Last assessed on 26th August 2020.
- Sharma S. Cancer care takes a hit during lockdown. June 21, 2020. Available at <https://www.hindustantimes.com/india-news/cancer-care-takes-a-hit-during-lockdown/story-9yIR9C2F6ZhrmyodjFdGRO.html>. Accessed October 8, 2020.
- Dhupkar A. Tata hospitals postpone chemotherapy and surgeries. March 22, 2020. Available at <https://mumbaimirror.indiatimes.com/coronavirus/news/tata-hospitals-postpone-chemo-and-surgeries/articleshow/74754405.cms>. Accessed October 8, 2020.
- Sharma EK. How can India combat COVID-19's collateral damage? August 31, 2020. Available at <https://thewire.in/health/national-health-mission-covid-19-medicine-vaccine>. Accessed October 8, 2020.
- Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* 2018;68:394-424.
- Shankar A, Saini D, Bhandari R, Bharati SJ, Kumar S, Yadav G *et al.* Lung cancer management challenges amidst COVID-19 pandemic: Hope lives here. *Lung Cancer Manag* 2020;9:LMT33.
- Möller TR, Brorsson B, Ceberg J, Frödin JE, Lindholm C, Nylén U *et al.* A prospective survey of radiotherapy practice 2001 in Sweden. *Acta Oncol (Stockholm, Sweden)* 2003;42:387-410.
- Shankar A, Saini D, Goyal N, Roy S, Angural H, Kaushal V *et al.* Cancer Care Delivery Challenges in India during the COVID-19 Era: Are We Prepared for the Postpandemic Shock?. *Asia Pacific Journal of Oncology Nursing*. 2021. 10.4103/apjon.apjon_57_20
- Samik U, Xin YU, Cristina O, Megan H, Jeffrey H, Vanessa M. Impact of COVID-19 on oncology clinical trials. *Nature Reviews Drug Discovery* 2020;19(6).
- David MW, Donald HR, Patricia H, Laura LA, Edward SA, Heidi KD. Early Impact of COVID-19 on the Conduct of Oncology Clinical Trials and Long-Term Opportunities for Transformation: Findings from an American Society of Clinical Oncology Survey. *JCO Oncology Practice* 2020;16(7).
- Goyal N, Saini D, Angural H, Richa R, Kaushal V, Shankar A. COVID-19 and Its Impact on Cancer Patient's Outcome and Cancer Research. *Asian Pacific Journal of Cancer Care*. 2020. 10.31557/apjcc.2020.5.S1.199-201.

18. Grover S, Dua D, Sahoo S, Mehra A, Nehra R, Chakrabarti S. Why all COVID-19 hospitals should have mental health professionals: The importance of mental health in a worldwide crisis! *Asian J Psychiatry* 2020;51:102147
19. Neal RD, Tharmanathan P, France B, *et al*: Is increased time to diagnosis and treatment in symptomatic cancer associated with poorer outcomes? Systematic review. *Br J Cancer* 2015;112:S92-S107, (suppl 1) Medline, Google Scholar
20. Burki TK. Cancer guidelines during the COVID-19 pandemic. *Lancet Oncol* Google Scholar), leaving them in a state of utter dilemma 2020;21:P629-P630
21. Smith SK, Herndon JE, Lyerly HK *et al*. Correlates of quality of life-related outcomes in breast cancer patients participating in the Pathfinders pilot study. *Psycho oncology* 2011;20:559-564 Medline, Google Scholar
22. Pinquart M, Duberstein PR. Associations of social networks with cancer mortality: A meta-analysis. *Crit Rev Oncol Hematol* 2010;175:122-137 Medline, Google Scholar
23. Al-Shamsi HO, Alhazzani W, Alhurajji A *et al*. A practical approach to the management of cancer patients during the novel coronavirus disease 2019 (COVID-19) pandemic: An international collaborative group. *The Oncologist* 2020;25:e936-e945. Wiley Online Library CAS PubMed Web of Science@Google Scholar
24. Carlson LE, Waller A, Groff SL, Giese-Davis J, Bultz BD. What goes up does not always come down: Patterns of distress, physical and psychosocial morbidity in people with cancer over a one year period. *Psychooncology* 2013;22:168-76.
25. Travado L, Breitbart W, Grassi L, Fujisawa D, Patenaude A, Baider L *et al*. 2015 president's plenary international psycho-oncology society: Psychosocial care as a human rights issue-challenges and opportunities. *Psychooncology* 2017;26:563-9.
26. Bultz BD, Cummings GG, Grassi L, Travado L, Hoekstra-Weebers J, Watson M. President's plenary international psycho-oncology society: Embracing the IPOS standards as a means of enhancing comprehensive cancer care. *Psychoncology* 2013, 2014;23:1073-8.
27. Buss MK, Lessen DS, Sullivan AM, Von Roenn J, Arnold RM, Block SD. Hematology/oncology fellows' training in palliative care: Results of a national survey. *Cancer* 2011;117:4304-11.
28. Singhai P, Rao KS, Rao SR. Palliative care for advanced cancer patients in the COVID-19 pandemic: Challenges and adaptations. *Cancer Res Stat Treat* 2020;3(S1):127-32.
29. Hanna TP, Evans GA, Booth CM. Cancer, COVID-19 and the precautionary principle: Prioritizing treatment during a global pandemic. *Nat Rev Clin Oncol* 2020;17:268-70.
30. National Comprehensive Cancer Network (NCCN), . Principles for management of colorectal cancer patients during the COVID-19 pandemic. <https://www.nccn.org/covid-19/pdf/ColorectalCOVID-19.pdf> January 5–2020
31. Yu J, Ouyang W, Chua MLK, Xie C. SARS-CoV-2 Transmission in patients with cancer at a tertiary care hospital in Wuhan. *China JAMA Oncol* 2020;6:1108-10.
32. Onder G, Rezza G, Brusaferro S. Case-fatality rate and characteristics of patients dying in relation to COVID-19 in Italy. *JAMA*. 2020;323:1775-6.
33. <https://phw.nhs.wales/news/novel-coronavirus-covid-19-temporarily-pauses-some-of-the-screening-programmes-in-wales/>
34. <https://www.gov.scot/news/health-screening-programmes-paused/>
35. <https://www.health-ni.gov.uk/news/temporary-pause-routine-screening-programmes>
36. Centers for Medicare & Medicaid Services. <https://www.cms.gov/files/document/cms-non-emergent-elective-medical-recommendations.pdf> (2020).
37. Ismaili N, El Majjaoui S. Management of breast cancer during COVID-19 pandemic in Morocco *Breast J* 2020;26:1618-1619 <https://doi.org/10.1111/tbj.13925> PMID: 32475033 PMCID: 7300778
38. Oualla K, Nouiakh L, Acharfi N *et al*. How is Morocco reacting to COVID-19 crisis in anticancer centers? *Cancer Control* 27 1073274820941973 2020.
39. Abila DB, Ainembabazi P, Stark AH. COVID-19 pandemic and the widening gap to access cancer services in Uganda *Pan Afr Med J* 2020;35(2):140 <https://doi.org/10.11604/pamj.suppl.2020.35.2.25029> PMID: 33193955 PMCID: 7608761
40. Sud A, Jones ME, Broggio J *et al*. Collateral damage: the impact on outcomes from cancer surgery of the COVID-19 pandemic *Ann Oncol* 2020;31(8):1065-1074 <https://doi.org/10.1016/j.annonc.2020.05.009> PMID: 32442581 PMCID: 7237184
41. Dalton M, Holzman E, Erwin E *et al*. Patient navigation services for cancer care in low-and middle-income countries: a scoping review *PLoS One* 14 e0223537 <https://doi.org/10.1371/journal.pone.0223537> PMID: 31622363 PMCID: 6797131 2019
42. <https://www.facs.org/covid-19/clinical-guidance/elective-case>
43. NHS England (<https://www.england.nhs.uk/coronavirus/wpcontent/uploads/sites/52/2020/04/C0239-Specialty-guideEssential-Cancer-surgery-and-coronavirus-v1-70420.pdf>) (2020)
44. Marijnen, C.A.M. *et al*. *Radiother. Oncol.* <https://doi.org/10.1016/j.radonc.2020.03.039> 2020.
45. Xie C *et al*. *medRxiv* <https://doi.org/10.1101/2020.03.21.20037051> 2020, 12.
46. Krenqli M, Ferrara E, Mastroleo F, Brambilla M, Ricardi U. *Adv. Radiat. Oncol.* <https://doi.org/10.1016/j.adro.2020.03.003> (2020)
47. Stebbing J *et al*. *Lancet Infect Dis.* [https://doi.org/10.1016/S1473-3099\(20\)30132-8](https://doi.org/10.1016/S1473-3099(20)30132-8) (2020).
48. Kourie HR, Eid R, Haddad F. *et al*. The future of cancer research after COVID-19 pandemic: recession? *Fut Oncol* 2020;16:1493-1495 <https://doi.org/10.2217/fon-2020-0397>
49. International Cancer Research Partnership: Project funding people map. Available at <https://www.icrpartnership.org/map/people/215558>. Accessed October 8, 2020.
50. Okunade KS, Okunowo AA, Ohazurike EO *et al*. Good clinical practice advice for the management of patients with gynaecological cancer during the COVID-19 pandemic in Nigeria and other resource-constrained

- countries Ecancermedicalsecience 14 1075
<https://doi.org/10.3332/ecancer.2020.1075> PMID:
32863869 PMCID: 7434503 2020
51. Berger-Richardson D, Ko G, Hong NJL. Preparing for the renaissance: treating breast cancer during the COVID-19 pandemic and planning for a safe re-emergence to routine surgical care within a universal health care system *Curr Oncol (Toronto, Ont)* 2020;27:163-168.
 52. Shankar A, Seth T, Saini D, Bharati SJ, Roy S. Oncology Nursing Challenges during COVID-19 Outbreak: Precautions and Guidance. *Asia Pac J Oncol Nurs* 2020;7:305-7.
 53. American Telemedicine Association. Telemedicine, Telehealth, and Health Information Technology [Internet]. *Who.int*. 2006 [cited 10 June 2020] Available from:
https://www.who.int/goe/policies/countries/usa_support_tele.pdf?ua=1 . [Google Scholar]
 54. National Health Service England. Clinical guide for the management of noncoronavirus patients requiring acute treatment: cancer. March 23, 2020
<https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/specialty-guide-acute-treatment-cancer-23-march-2020.p> . Accessed June 8, 2020. [Google Scholar]
 55. Nelson R. Disruptions in Cancer Care in the Era of COVID-19. Available:
<https://www.medscape.com/viewarticle/927215>. (accessed March 22,2020) [Google Scholar]
 56. Lewis G, Hatch S, Wiederhold L, Swanson T. Long-term Institutional Experience with Telemedicine Services for Radiation Oncology: A Potential Model for Long-term Utilization. *Advances in Radiation Oncology* 2020 [PMC free article] [PubMed] [Google Scholar]