

The COVID-19 pandemic and cancer care

The SARSCoV-2 virus has spread globally to every country, infecting over 247 million people and causing almost 5 million deaths as on 3 November 2021. Practically every aspect of life has been affected, including businesses, financial markets, agriculture, education and even healthcare. While the direct effects of the pandemic are obvious and reported regularly, the indirect effects are less well known and recognized. Depending on the scale of the pandemic and preparedness of health systems, the provision of non-COVID healthcare in most countries has been considerably impacted. These include care of infectious diseases like tuberculosis and AIDS, non-communicable diseases including diabetes, stroke, cardiac disease, mental health and cancer. Patients with cancer, and the cancer care delivery system had to deal with two main challenges during the pandemic. First, the fact that patients with cancer have worse outcomes from COVID-19 means that this subgroup of the population needs special care. Second, the extraordinary demands on health systems and healthcare providers by the COVID-19 pandemic has adversely impacted several aspects of cancer control globally.

Patients with cancer have a higher chance of infection with COVID-19, a higher proportion of more severe disease and higher mortality. Reasons for this include the immuno-suppression caused by cancer and its treatment, making them more susceptible to get infected; a suboptimal immune response against the infection is possibly responsible for more severe disease and higher case fatality rate. Moreover, patients with cancer are more likely to have other comorbidities, which also contribute to the worse outcomes. The implications are that patients with cancer need to be extremely cautious and avoid getting infected to the extent possible. This creates a dilemma especially in patients who are on active treatment for their cancer, as they require multiple visits to hospitals, which are considered high-risk areas for SARSCoV-2 infection. While most cancer units modified patient pathways within the hospital to minimize risks to patients with cancer, this is not always possible, especially in low- and middle-income countries. Additionally, clinicians face a difficult dilemma of continuing active cancer treatment during waves of the pandemic, knowing that these treatments would render their patients even more immunocompromised.

The second important consequence of the COVID-19 pandemic has been on the different aspects of cancer control, most of which were impacted adversely. There have been widespread reductions in provisioning of cancer care globally during the peak of the pandemic. A World Health Organization (WHO) survey of 155 countries indicated that 42% of countries had disruptions to their cancer prevention and care during the pandemic. Even this could be an underestimate. Cancer Research UK (CRUK) projected a backlog of approximately 2.4 million people for cancer screening and care, accompanied by reductions in cancer surgery and chemotherapy. These reductions in access to cancer care were partly because of the healthcare system being overwhelmed with patients who were symptomatic for COVID-19 requiring hospitalization, but also because of national or regional restrictions and lockdowns.

Cancer screening came to a virtual standstill during the early part of the pandemic as screening was considered low priority when health systems were struggling under the increasing burden of COVID-19. Cancer diagnoses dropped considerably during the peak periods of the pandemic, both because healthcare providers were overwhelmed with coping with COVID-19 but also reluctance amongst the public to access health services due to fear of getting infected. All modalities of cancer treatment were reduced by varying extents, based on the scale of the pandemic and the available redundancy within the healthcare system. The COVID Surg collaborative estimated that over 2.3 million cancer surgeries were either cancelled or postponed globally over a 12-week period of the pandemic. Referrals for cancer diagnoses to consultants dropped by 60% in the UK National Health Service. A large nationally representative study done in several centres of the National Cancer Grid in India demonstrated that substantial reductions in all aspects of cancer care ranging from 30% to 70% were seen during the early part of the pandemic when the national lockdown was most stringent. Delays in cancer treatment can have serious repercussions. It is estimated that a three or six-month delay in cancer surgery would result in >17% or >30% reduction in survival respectively, for stage 2/3 aggressive cancers like esophagogastric, hepatobiliary-pancreatic, urinary bladder and lung. A systematic review of seven major cancers (lung, breast, bladder, colon, rectum, cervix and

head, and neck) and the three treatment modalities (surgery, radiotherapy and systemic therapy) showed that even a four-week delay is consistently associated with increased relative risk of mortality, with further increases in mortality with longer delays. It would be sobering to calculate the global increase in deaths due to delayed cancer diagnosis and treatment during the pandemic. Importantly, these data are compelling enough to make us rethink our strategy about wait times for cancer management even during normal (non-pandemic) times.

Optimal cancer management during the pandemic had to balance the risks of contracting COVID-19 with the benefits of providing safe treatment to patients with cancer. Treatment protocols were modified at the beginning of the pandemic, with several professional organizations like the American Society of Clinical Oncology and the European Society of Medical Oncology making recommendations on adapting therapy to cope with the pandemic. Strategies adopted included triaging of care, prioritizing cancers which were life threatening and aggressive over less lethal cancers, and cancers with better outcomes with therapy over those with marginal benefits. Systemic therapies were modified to reduce the need for patients to visit their hospital frequently. Fractionation schedules in radiation were modified to complete treatment in a shorter period of time. Non-essential investigations, especially imaging to assess response, were deferred and used less frequently. Hospitals and patients increasingly relied on tele- and video-consultations instead of in-person visits to the hospital wherever possible. While these were done primarily to decrease crowding in hospitals and minimize patients visits, this could be one of the practices that may continue beyond the pandemic. Many of these strategies have been emphasized by several authors in the 'Choosing Wisely' initiatives much before the pandemic – these urge clinicians to avoid low-value, or even harmful practices and interventions that are common in routine practice. Mass vaccination at scale is the way out of this pandemic, and India has administered over one billion vaccine doses so far. Specific to patients with cancer, we know now that the immune response in patients vaccinated with a single dose are suboptimal; even with two doses, fewer patients with cancer develop antibodies compared to controls, especially with haematological cancers. Strategies like a booster dose and decreasing the interval between doses have been suggested to optimize immune response. It is important that we adopt evidence-based strategies to maximize the chances of patients with cancer being protected from infection by effective vaccines.

At the Tata Memorial Centre, we responded rapidly to the evolving situation at the beginning of the pandemic. We redesigned care pathways in the hospital to avoid mixing of patients with suspected or diagnosed COVID-19 with those who were not. Stringent screening at the gates of the hospital, low threshold for testing for SARS-CoV-2

infection (with creation of in-house facilities for testing), separate wards for patients with COVID-19, enhanced infection prevention and control (IPC) practices, and adherence to evidence-based treatment of patients with COVID-19 were some of the measures taken. A COVID-19 action group was created with clinicians, nurses, paramedics and administration and met daily (sometimes several times a day) to take stock and make decisions in what was a rapidly evolving situation. Open and transparent communication with all cadres of staff through virtual groups and meetings ensured that decisions were implemented in real time, and built trust within our employees. A dedicated clinician group to treat patients with cancer and COVID-19 ensured evidence-based treatment, and enabled decisions on escalation of care depending on their overall prognosis. Patients on routine follow up were contacted telephonically and advised care, reducing crowding in the hospital. A new tele- and video-consultation setup was created to serve patients who were unable to travel to Mumbai for cancer care; we also liaised with hospitals close to patients' homes so that their treatment would not be delayed. The National Cancer Grid also initiated a series of 16 webinars between March and August 2020 to disseminate best practices and emerging evidence to manage COVID-19 across the country.

We have learnt a number of lessons from the COVID-19 pandemic. First, the importance of strong IPC practices have been demonstrated and have contributed considerably to mitigate the effects of the pandemic. Second, it has become increasingly clear that management of non-pandemic illnesses cannot be compromised even during the extenuating circumstances of a global pandemic. While a pandemic of this scale does demand a substantial proportion of healthcare services, health systems should be capable of continuing care of major diseases as the consequences of not doing so are dire. To put things in perspective, while the COVID-19 pandemic was (and is) devastating and caused just under 2 million deaths globally in 2020, cancer alone caused almost 10 million deaths in 2020. Third, it has taught us about using what we have learnt from crises like the COVID-19 pandemic and implement these during 'normal' times – more judicious, rational and evidence-based use of resources which should continue well beyond this pandemic. Finally, the importance of health systems' preparedness has been clearly demonstrated. Governments across the world should prioritize health and ensure that healthcare is available to all regardless of their socio-economic status.

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