

## **S&T advancements can help cancer patients navigate through treatment during pandemic**

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Coronavirus pandemic has overwhelmed health infrastructure of many countries world over to a degree that even essential services like cancer care have also been hit. Many patients have had their surgery or subsequent treatment delayed. So far, India has been fortunate in this regard.

Remarkably, most cancer care providers in India have managed to keep their services up and running. However, ripples created by the pandemic such as lockdowns, strict social distancing norms and travel restrictions, have definitely impacted cancer patients in India. Even though the government made provisions for travel related to medical treatment, the geographical coverage of health services like cancer care is concentrated in big cities in India.

The complex restrictions on inter- and intra-state travel and the complete cessation of public transport hindered some cancer patients from seeking the treatment they needed. In addition, the fear factor associated with COVID is such that patients and their caregivers believe that interacting with any medical staff will expose them to coronavirus. As patients on anti-cancer treatment are more vulnerable to infection, they believe it is better to avoid hospital visits altogether.

Here, technology has been a great saviour. We have taken to teleconsultation in a big way to communicate with patients through video calling and video conferencing. This ensured some continuity of care and allowed routine follow-up to be done without increasing a patient's exposure to coronavirus.

This would not have been possible if a pandemic of this scale had hit 10 years ago. Of course, most cancer patients cannot fight the disease using teleconsultation alone. Delays in cancer treatment can have severe consequences, and treatment modalities such as surgery, chemotherapy, and radiation therapy need to be delivered in a timely manner in a hospital setting, to halt the spread of cancer and improve the survival rate of cancer patients.

If adequate precautions are taken, cancer treatment can be undertaken quite safely, and we have seen evidence of this

through the lockdown. With careful use of personal protective equipment (PPE), for example, the risk of intra-hospital transmission of COVID-19 can be greatly minimized. Many professional organizations such as American Society of Clinical Oncology (ASCO), European Society for Medical Oncology (ESMO) and Indian Association of Surgical Oncology (IASO) have put out guidelines on how to manage cancer care during the ongoing pandemic.

These guidelines give directions on triaging and prioritizing care based on the type of cancer, severity of the disease and consequences of delaying treatment. Another boon has been that the wealth of research and clinical trials in cancer have given many options in terms of how to manage cancer care today. Personalized treatment is the current standard of management for most of the cancers. As part of this, in quite a few scenarios where chemotherapy was routinely prescribed, targeted therapy or immunotherapy has taken over. These can sometimes be simple oral tablets with easy side effect profile and devoid of immunosuppression that can otherwise be associated with chemotherapy.

Taking the example of breast cancer, the most common cancer in India, medical science has advanced to the point where each person's cancer care can be personalized and optimized. If a woman has a type of breast cancer called hormone-receptor positive breast cancer, as per ESMO guidelines, she can avoid chemotherapy if she is low-risk for disease recurrence as per a prognostic test.

Because chemotherapy suppresses the immune system and makes a person more prone to infections, being able to avoid it would be a huge boon for patients. Previously, as cancer clinicians, we used to rely on tests being outsourced out of India for patients willing for such tests to know their risk of recurrence and to potentially avoid chemotherapy. These tests (Oncotype Dx, MammaPrint) are very expensive and take a long time for results to be available.

The current pandemic has put the case forward for indigenously developed tests in line of being 'vocal for local'! There is a prognostic test called CanAssist Breast, offered by an Indian company called OncoStem Diagnostics based out of Bangalore. This test was validated using a network of more than 10 Indian hospitals and is the only prognostic test to have been validated on Indian patients.

It analyzes the breast tumour tissue and gives a result as either low-risk or high-risk for recurrence, using a machine-learning based algorithm. If a woman turns out to be at low-risk of recurrence, she can bypass chemotherapy and directly move to oral hormone therapy tablets which are not immunosuppressive. This test is performed on early-stage breast cancer patients. It helps hugely if a breast cancer, or any cancer for that matter, is diagnosed in an early stage to cure it completely. Therefore, all women are encouraged to be vigilant about initial signs of breast cancer like a lump, discharge or pain, and seek immediate care should there arise any. Ignoring cancer and its symptoms is dangerous, as the disease could progress to an advanced stage and require more aggressive treatment.

Even in terms of breast cancer screening, many companies have developed new and innovative screening technologies that are often machine learning based. These newer methodologies are non-invasive, portable and can be done in the patient's home. Early detection rates should therefore receive a significant boost. Technology has changed the way cancer care is being delivered and is proving exceptionally beneficial during the unprecedented circumstances brought about by COVID pandemic.

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