
OncCOVID App to Estimate Impact of Delayed Cancer Treatment



Cancer treatment delay has had significant impact on cancer-specific survival and COVID-19-specific mortality. While treatment delay is being recommended during the pandemic, this could be associated with suboptimal outcomes.

A decision analytical modelling study was conducted to evaluate how effective a web-based application called OncCOVID could be to obtain quantitative integration of cancer-specific and COVID-19-specific mortality estimates. The goal was to see if such an application can be used to make optimal decisions for individual patients and optimise resource allocation.

In this decision analytical model, age-specific and stage-specific estimates of overall survival pre-COVID-19 were adjusted by the probability of COVID-19 (individualised by county, treatment-specific variables, hospital exposure frequency, and COVID-19 infectivity estimates), COVID-19 mortality (individualised by age-specific, comorbidity-specific, and treatment-specific variables), and delay of cancer treatment (impact and duration). These model estimates were then integrated into the OncCOVID web application to estimate the overall survival and restricted mean survival time of patients who received immediate vs delayed cancer treatment.

The data used to test the model was extracted from the National Cancer Institute database. The study used two approaches to provide an estimate of the potential impact of treatment delay on the survival of cancer patients. In the first approach, data from 5436896 patients who received cancer treatment between 2004 and 2014 was included. In the second approach, a rapid semisystematic review of published review was used to assess the impact of treatment delay.

Findings of the study show that the impact of delayed treatment compared with immediate treatment varied across and within different cancer types and stages. Therefore, impact was different depending on patient age, cancer type and cancer stage. For example, in patients with prostate cancer, the estimated impact of delayed treatment as per this model was minimal. On the other hand, in patients with pancreatic cancer, the harm of treatment delay was associated with greater mortality and this cancer-specific mortality far exceeded any decrease in COVID-19 specific mortality.

These findings highlight the challenges of decision-making that clinicians face during the pandemic. These decisions are being made to triage cancer treatment based on urgency, site of the tumour, and the stage of cancer, but are not based on any specific personalised guidelines. Making these decisions in this manner could potentially result in net harm associated with immediate or delayed treatment. This model could provide more accurate estimates and could help optimise outcomes for cancer patients during the COVID-19 pandemic. The model is focused on assessing the impact of these decisions on individual patients rather than the entire population or society. A model like OncCOVID could more accurately identify which patients could benefit from immediate treatment.

Source: [JAMA](#)

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