COVID-19 Patients With Cancer in New York City Have a High Death Rate

Those with blood cancers or lung cancer fared poorly in the first U.S. study of the new coronavirus in people with cancer.

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COVID-19 patients with cancer appear to have a higher rate of death than those without cancer, but the risk varies widely by cancer type, according recent study by researchers at Montefiore Health System in the Bronx in the New York City, the epicenter of the coronavirus epidemic in the United States.

"Our findings emphasize the need to prevent cancer patients from contracting COVID-19 and—if they do—to identify and closely monitor these individuals for dangerous symptoms," lead study author Vikas Mehta, MD, MPH, of Montefiore Health System and Albert Einstein Medical College said in a press release. "We hope that our findings can inform states and communities that have not yet been so severely struck by this pandemic about the unique vulnerability cancer patients face."

The latest results were published May 1 in the American Association for Cancer Research (AACR) journal Cancer Discovery. Earlier in the week, the AACR's virtual annual meeting featured a special session on COVID-19 and cancer, which included reports of outcomes among cancer patients with COVID-19 in China, Italy, France and Spain. Louis Voight, MD, of Memorial Sloan Kettering Cancer Center in New York City, gave an overview of COVID-19 in the United States, with a focus on racial and ethnic disparities, but that talk did not include detailed patient outcome findings.

Early reports from China, where the coronavirus pandemic originated in late December, showed that older people, those with compromised immune systems and those with underlying health conditions are more susceptible to severe COVID-19. One study saw a death rate of 6% for people with cancer—more than twice as high as the overall COVID-19 mortality rate in China.

There are several reasons why people with cancer might be at greater risk. Many are older and have coexisting health conditions. Chemotherapy medications and some targeted therapies for cancer can cause neutropenia, a temporary depletion of immune system white blood cells that fight infection. People who receive bone marrow stem cell transplants or CAR-T therapy or for blood cancers are at especially high risk.

Mehta and colleagues identified 218 COVID-19 patients with cancer, mostly from the Bronx, treated in the Montefiore Health System between March 18 and April 8, 2020. Many had been exposed to the coronavirus in healthcare settings, including nursing homes and hospitals. Three quarters had solid tumors and a quarter had blood cancers. Most were not currently on cancer treatment.

Of these, 61 (28%) died of COVID-19. Mortality rates were 37% for those with blood cancers and 25% for those with any solid tumor. People with blood cancers were also more likely to be admitted to the ICU (26% versus 19%, respectively), but about equally likely to be put on a ventilator (11% versus 10%).

Severe lung damage in people with COVID-19 may be caused by an overactive immune response known as a cytokine storm, in which the immune system goes into overdrive and releases large amounts of chemical messengers such as interleukin 6 (IL-6). The study authors suggested that people with blood cancers may be more susceptible to cytokine-mediated inflammation due to disruption of various types of immune cells. Researchers are now testing whether the IL-6 blocker Actemra (tocilizumab)—a medication used to treat immune-mediated side effects in people receiving checkpoint inhibitors or CAR-T therapy—can prevent or calm the cytokine storm in people with COVID-19.

Looking at the solid tumors, people with pancreatic cancer (67%), lung cancer (55%), and colorectal or gynecological malignancies (both 38%) had elevated death rates, while those with prostate cancer (20%) or breast cancer (14%) had lower mortality. People with advanced metastatic cancer had a trend toward higher mortality, but this did not reach statistical significance.

Comparing these numbers against death rates among people of the same age without cancer in the same health system and in the city as a whole, the researchers concluded, “Cancer patients demonstrate a markedly increased COVID-19 mortality rate compared to non-cancer and all New York City COVID-19 patients.” In fact, case fatality rates were two to three times higher among people with cancer compared to those without cancer.

The researchers acknowledged that socioeconomic disparities affecting people in the Bronx might contribute to the high death rates seen in this study. Black people, in particular, are increasingly recognized as having worse COVID-19 outcomes, accounting for 33% of all hospital admissions while making up just 13% of the U.S. population. But in this analysis, the racial/ethnic distribution of COVID-19 patients reflected that of the surrounding community.

In this analysis, current chemotherapy or radiation therapy were not linked to increased mortality, unlike the associations seen in some other cancer and COVID-19 studies. Very few patients were on immunotherapy, and it also did not show an association with mortality.

“A key element is that mortality appears to be more closely related to frailty, age and co-morbidities than to active therapy for cancer,” said Balazs Halmos, MD, of Albert Einstein Medical College, one of the senior authors.

“Our data suggest that we should not stop lifesaving cancer therapies, but rather develop strategies to minimize potential COVID-19 exposures and re-evaluate therapies for our most vulnerable cancer populations,” added co-senior author Amit Verma, MBBS, also from Einstein.

Click here to read the study abstract.
Learn about “What People With Cancer Need to Know About the New Coronavirus.”
