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LETTER/OP-ED

COVID-19 Impacts on Cancer Treatment—Nosocomial Infection, Therapy Disruption, and Research Application

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One of the greatest ironies of health care is that the one place which ought to be a haven for the sick—the hospital—can also be one of the greatest threats to the sick. Sick patients with weakened immune systems walking into crowds is a recipe for a deadly threat: a nosocomial infection (also known as a health care-acquired infection). Nosocomial infection, caused by exposure to infectious agents in hospitals, has recently been brought into full play during the coronavirus disease 2019 (COVID-19) pandemic. The COVID-19 (SARS-Cov-2) has the potential for high rates of nosocomial infection; for example, an estimated 41% infection rate, including both health care workers and hospitalized patients, was observed before the virus and infection control was understood and implemented in the original Wuhan outbreak.[1] However, recent data indicate that adherence to infection control limits health care acquired infection. For example the health care workers most likely to be infected with COVID-19 were young (< 40 years of age) people who were not on the front line (with less stringent infection control), and the majority were infected during the first part of the epidemic, again before infection control was standardized.[2]

Nosocomial infection is an important issue in Ohio, as there are many large hospital systems that include treatment centers for cancer patients, who tend to be older and immunocompromised. Yu et al observed a higher rate of COVID-19 infection in patients with cancer in contrast to their observed cumulative incidence of COVID-19 (0.79% to 0.37%), and a higher risk of contracting COVID-19.[3] They theorized that this is because patients with hospital admissions and repeated hospital visits, such as cancer patients, are at a higher risk of COVID-19 infection, especially considering that less than half of the cancer patients were in active treatment. Further supporting the theory that cancer patients are at higher infection risk, a recent survey found that out of 85 cancer patients, 7 cancer patients had positive nasal swabs but were COVID-19 asymptomatic, and all eventually developed COVID-19 (5 were on active cancer therapy). The conclusion of this survey was that cancer patients should receive standard COVID-19 testing for infection control.[4]

Preventing COVID-19 infection for patients in cancer centers involves multiple prevention strategies. The National Comprehensive Cancer Network has a list of prevention strategies which include engineering controls intended to keep patients away from the COVID-19 virus. Their engineering controls include prescreening and screening patients for symptoms before in clinic visits, monitoring and limiting accompanying visitors/cohabitors, and ensuring that only essential visits are occurring. Their engineering controls also involve selecting cancer treatments which do not involve visits, maximizing televisits, and repeated testing of previously infected cancer patients before they come in for clinic visits.[5]

Infection control, although necessary, is causing a short-term disruption of cancer therapies due to the limitation of hospital visits necessary for therapy. Limiting hospital visits is halting the constant therapy cancer patients need to address their chronic condition.[6] Additionally, although the short-term effects of COVID-19 on cancer therapy are serious, the long-term impact of COVID-19 on cancer is another issue to monitor. For example, researchers at The Ohio State University are reviewing cancer screening and care within Ohio to see if COVID-19 decreased cancer screenings. Decreased cancer screenings threaten to leave cancers undiagnosed and thus increase the overall rate of cancer.[7] Another long-term impact of COVID-19 on cancer is the delayed development of novel cancer therapies in clinical trials. Infection control hampers the recruitment of new patients to trials, requires the suspension of current studies, and halts new studies, limiting the data available for cancer trials and delaying the development of drugs. Additionally, delayed hospital visits lead to a delay in recognizing cancer progression, adverse effects of the drug, and deaths which are related to COVID-19 infection, not cancer, which reduces the quality of the data in the studies. All of this occurs with staff and funding redirection to COVID-19, leading to a decrease in well researched new cancer therapies.[6]

The repercussions of the COVID-19 pandemic on cancer therapy and research are likely to continue even as stay at home orders lift and “normal life” resumes. It has been suggested that the hospitals which are the most successful at infection control do not have rigid

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measures, but rather monitor, trace, and quarantine symptomatic employees, and enforce hand hygiene, limit patient visits, and use standard droplet control (gown, surgical mask, and gloves) when necessary.[8] Keeping this in mind, and the indications that the nosocomial spread of COVID-19 can be controlled, it is time to reevaluate the costs of short-term infection control strategies and ensure that they are not harming the long-term health of cancer patients. This will involve a balance of current infection control measures and innovative research methods to find the right measures to fully protect the health of this vulnerable population in Ohio. It is imperative that public health workers take what has been observed in COVID-19 and continue to apply prevention strategies as cancer research moves into a new era shaped by COVID-19.

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