

Improving Safety, Confidence and Clinical Care of Cancer Patients Through Screening Healthcare Workers for Neutralizing COVID-19 IgG Antibodies and Establishing a COVID-19 Convalescent Plasma Bank



King Hussein Cancer Center | Amman, Jordan

The onset of the COVID-19 pandemic challenged healthcare systems around the world. Early on, it became apparent that the elderly and individuals either immunocompromised or living with comorbid conditions were most at risk for severe illness and death, including patients being actively treated for cancer with a need for continued care. The challenge of protecting this especially vulnerable at-risk group from exposure during treatment was daunting.

A major concern for cancer patients was the fear of contracting the virus in healthcare settings from healthcare workers who may have contracted the virus. In Jordan, this concern was especially pronounced with 739,847 COVID-19 cases and 9,530 COVID-19 deaths reported as of Nov. 11, 2021. Mitigation efforts such as assigning workers exclusively to the cancer treatment wards could be impactful, and once vaccines became available, having healthcare staff receive vaccinations became an additional strategy. Because no vaccine stimulated an immune response in every individual, determining the immune response and antibody presence in healthcare workers also emerged as a key approach.

The King Hussein Cancer Foundation and Center in Amman, Jordan, identified this opportunity to improve patient safety by focusing on healthcare workers and their immune response following vaccination. Utilizing funding from and in partnership with The Abdul Hameed Shoman Foundation, the Center sought to diminish the risk of COVID-19 virus transmission when treating vulnerable cancer patients. The program also identified healthcare workers to be donors to the newly established COVID-19 convalescent plasma database and bank for treating immunocompromised COVID-19 patients.

King Hussein Cancer Center's protocol for screening healthcare workers to determine their immune response to vaccination was implemented using a blood test that quantitatively measured IgG antibodies to the spike protein on the surface of the SARS-CoV-2 virus. The team chose this IgG antibody test as it was the most sensitive, fully automatic and practical test available. This assay had a reported 99.60% specificity, meaning that a positive test was highly likely to be positive for the SARS-CoV-2 antibody, and a 99.35% sensitivity, meaning that essentially all those with antibodies would have them detected.

Healthcare workers who failed to generate a level of protective

antibody response were identified as 5.3% of those evaluated, allowing for not only improved staff safety, but improved clinician confidence when engaging with patients. Healthcare worker antibody status provided a measure of immunity, helping to alleviate fears of cancer patients contracting COVID-19 while receiving treatment.

"We never want to compromise the health of our patients and the scary thing about SARS-CoV-2 is that healthcare workers can be unknowingly infected," explained Dr. Osama Abu Atta, section head of Infectious Disease.

The impact on patient safety was universally valued by those involved with patient care. Dr. Maher Sughayer, chairman of the Department of Pathology and Laboratory Medicine, noted that "through screening healthcare workers ... we improved patients' safety by identifying the employees who lack immunity against COVID-19" and by establishing the COVID-19 convalescent plasma database and bank at a critical time.

From a patient safety perspective, the Center mitigated risk of transmission of this virus to vulnerable patients. Dr. Atta spoke to this point, noting, "Managing avoidable complex procedures in cancer patients with chronic illnesses and underlying health conditions saves substantial costs while protecting patient morbidity and mortality."

But reducing the risk of cancer patients from contracting COVID-19 had the additional benefit of mitigating an estimated cost of 1,200 Jordanian Dinar per day for each cancer patient who remained free of COVID-19. King Hussein Cancer Center's reputation as a premier facility for cancer care increased with implementation of this program, according to Dr. Asem Monsour, the Center's CEO and director general.

"King Hussein Cancer Center has been long associated with high-quality and patient-centric healthcare," Dr. Monsour said. "The Center's leadership during the COVID-19 pandemic continues with the development of an emerging convalescent COVID-19 plasma biobank in partnership with and through funding from The Abdul Hameed Shoman Foundation Innovation Award."

The UNIVANTS of Healthcare Excellence award program recognized this integrated clinical care initiative for its positive impact on patient care, safety and outcomes.

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