Study Tracks Coronavirus Spread in Pediatric Dialysis Unit

The inquiry was the first of its kind to check the antibody status of patients and staff to uncover COVID-19 cases in this medical setting.

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Dialysis units are hot spots for the spread of the new coronavirus, according to several studies from Wuhan, China. Now, findings published in JAMA suggest that the same is true in pediatric dialysis units, where patients and staff interact in confined spaces, reports the Indiana University School of Medicine.

For the study, researchers at the Riley Hospital for Children at Indiana University (IU) Health performed coronavirus antibody testing on 13 patients, 11 nurses, four staff members and 10 doctors in the pediatric dialysis unit. The goal was to track the symptomatic and asymptomatic spread of COVID-19 (the potentially lethal disease caused by the new coronavirus) in areas where it is difficult to maintain a social distance because of the open structure of the spaces and rotation of nurses assigned to the units.

Antibody tests do not detect the coronavirus itself but can show whether someone has previously had it. Experts think that antibodies will offer some protection against catching the virus again, but it is not known how long this will last.

By the 21st day, 11 health care workers and three patients tested positive for COVID-19 antibodies. (No patients developed symptoms between days 7 and 21.)

According to David Hains, MD, division chief of pediatric nephrology in the Department of Pediatrics at Riley Hospital for Children at IU Health and lead investigator of the study, results showed a high occurrence of COVID-19 antibodies in individuals who came into contact with one another in a pediatric dialysis unit. These elevated numbers suggest that many more health care workers are antibody-positive than would otherwise be expected, Hains said.

“Testing for the presence of these antibodies can allow for strategically staffing the care of patients who have COVID-19, or who are suspected to be positive, with nurses and physicians who also have tested positive for these antibodies,” Hains added.

In addition, the researchers noticed a dramatic decrease in cases when more aggressive measures

to protect patients and staff were implemented.

For example, when one nurse didn't exhibit symptoms of the virus but tested positive for antibodies and the coronavirus itself after taking a COVID-19 PCR test, Hains's group quickly quarantined her to help stop the spread of the virus. (PCR tests detect viral genetic material in a nasal swab sample. For more on how coronavirus is diagnosed, click here.)

Scientists will continue to track how loosening social distancing regulations impacts pediatric dialysis units and plan to replicate their study in an adult dialysis unit.

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