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Screening for SARS-CoV-2 in potential deceased organ donors

To the Editor:

We read with interest the case report by Kaul and colleagues detailing a proven case of transmission of SARS-CoV-2 from a lung donor with a negative nasopharyngeal swab (NPS) to a recipient in the United States.[1] A surgeon who reported possible exposure to the patient's respiratory secretions, but none of the other staff involved, also became infected.

Transmission of SARS-CoV-2 via the transplantation of lungs from asymptomatic or paucisymptomatic donors is a real risk, particularly during periods of high incidence of infection in the community; transmission through other organs remains theoretically possible[2,3] but with no confirmed cases to date. Importantly, the donor in the case described by Kaul et al did not undergo testing of the lower respiratory tract (LRT) prior to donation. We feel that this issue is important in the diagnosis of unsuspected SARS-CoV-2 infection, especially in lung donors. In the United Kingdom, NHS Blood and Transplant mandates testing for SARS-CoV-2 RNA in samples from both the upper and LRT in all potential deceased donors,[4] and our approach is described below.

Regardless of previously negative results during the potential donor's hospital admission, a NPS and an endotracheal aspirate (ETA) are tested for SARS-CoV-2 RNA as part of the organ donor characterization. Both samples must test negative before proceeding to mobilization of organ recovery teams and must be obtained no longer than 24 hours before organ recovery. The rationale for an ETA as well as a NPS is to increase diagnostic sensitivity.

ETA was chosen on the basis of its role in the diagnosis of respiratory infections, familiarity of intensive care staff with collection of this specimen type, and to avoid the infection control issues associated with bronchoalveolar lavage (BAL). ETA is collected under close circuit and secretions are trapped, avoiding risk of aerosolization. All UK laboratories performing standard mandatory donor testing have validated methodologies for the processing of LRT specimens. The assays used for SARS-CoV-2 genomic amplification have been validated for these specimen types, allowing local testing of all donors. ETA testing has led to detection of viral RNA with concomitant negative NPS; negative ETA results have also been useful when assessing complex cases by enabling donation with good recipient outcomes.

In the case of lung transplantation, a BAL of the donor lung is usually performed but it is not routinely tested for SARS-CoV-2 RNA. Candidate recipients are also tested pretransplant for SARS-CoV-2 RNA in NPS, upon arrival at the transplant center.

Our protocol was implemented immediately after declaration of the pandemic by the World Health Organization, allowing every potential donor to be rigorously and uniformly assessed across the United Kingdom. Between April 2020 and January 2021, 987 deceased organ donors enabled 2469 transplants, of which 75 were lung transplants, with no evidence of donor-derived transmission of SARS-CoV-2 to date.

This strategy minimizes the risk to transplant recipients and the staff involved in the care of both donors and recipients and we will continue to adapt it in line with evolving local epidemiology and general scientific knowledge.

KEYWORDS

clinical research/practice, donors and donation: deceased, donors and donation: donor-derived infections, editorial/personal viewpoint, infection and infectious agents – viral, infectious disease, lung transplantation/pulmonology, organ procurement and allocation

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