

Organ Procurement from Potential Donors with a History of COVID-19 Vaccination

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Dear Editor

During the current COVID-19 pandemic, one of the most critical concerns is an imbalance in the provision of health services. All elements, including medical equipment, drugs, and health providers, need to be managed in this regard.

Solid organ donation is a lifesaving practice rather than an elective surgery, and organ shortage causes high mortality rates due to the extended waiting lists. The global effects of the COVID-19 pandemic on organ procurement have intensified the imbalance between supply and demand, which can increase mortality rates among transplant candidates (1). Globally, organ failure affects more than 6 million people, and in 2018 (before the COVID-19 pandemic), only 150,000 transplants were carried out worldwide (2). It is noteworthy that, as Chen et al. reported, lung transplantation can also be a therapeutic intervention in COVID-19 patients with respiratory failure (3). In their study, a COVID-19 patient underwent lung transplantation surgery in the first month of infection. Hence, even losing one donor can be of vital importance.

Recently, the history of vaccination against COVID-19 in potential organ donors has become a concern with much debate. Both novel and traditional methods such as mRNA, adenovirus vectors, inactivated SARS-CoV-2 viruses, or subunits of SARS-CoV-2 proteins have been employed to develop the COVID-19 vaccine (4). In the adenovirus vector-based vaccines, the spike gene is delivered by viral vectors, which infects cells to generate cellular and humoral immune responses. In this regard, deletion of the genes responsible for replication can minimize the risk of possible adenovirus-related complications. However, in immunocompromised patients, the adenovirus can pose a risk (5). Therefore, more research and evidence are necessary for further risk evaluation.

Indeed, donor selection is the first step to ensuring the safety of recipients. Brain-dead donors who have received Covishield (live vaccine, Oxford-AstraZeneca, United Kingdom, Serum Institute of India, Pune) may transmit it through organ donation. Therefore, the World Health Organization (WHO) recommends postponing blood donation for 28 days after vaccination with a live-attenuated virus. As Bansal and Raturi have stated (6), respiratory transmission is the most common route of COVID-19 infection, and no transfusion-transmitted COVID-19 has been reported in the recipients who received blood from COVID-19 patients (7). In this regard, there is a broad spectrum of nil to 28 days for donor deferral. For example, in Canada, it does not matter whether or not a donor is vaccinated, and Canadian blood services have contended that vaccination cannot impact the eligibility of blood donors (6).

Regarding organ procurement, we have faced some limitations, such as reluctance of families to consent to organ donation, reduced potential to actual donor rate, and constraints in extended donor criteria, among other challenges. Today, COVID-19 vaccination has generated a new debate that will influence this situation. Therefore, procuring organs from a recently vaccinated brain-dead patient remains controversial.

In the organ procurement process, which involves donor identification, selection, family approach, and donor maintenance, there are both manageable (for example, donor detection) and unmanageable (for example, brain death due to malignancy) challenges. Therefore, organ procurement networks must make an enormous effort to identify and preserve organ donors. It seems feasible that the conditions of the recipients on waiting lists should be considered for accepting or rejecting potential donors with a history of COVID-19 vaccination. Moreover, all brain-dead patients who have received COVID-19 vaccination in Iran may be organ donation candidates if they meet other criteria.

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