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Letter to the Editor

Out-of-hospital cardiac arrest and donation after circulatory death during the COVID-19 pandemic



The rapid emergence of the novel coronavirus (COVID-19) disease posed potential obstacle for organ procurement and transplantation worldwide and in European countries.¹

In Italy,² the outbreak was rapid and as of March 22, 2020, and³ since March 10, the Italian government extended restrictions (comprising quarantine and self-isolation measures) from Northern areas to the whole country. Simultaneously, the Italian National Institute of Health and the National Transplant Centre defined regulatory measures for organ transplantation to maintain transplantation activity, from both deceased and living-related donors.³ Among these measures, a systematic COVID-19 surveillance was imposed for deceased and living donors and only donors tested negative for COVID-19 were considered for transplantation.³

In this setting, uncontrolled donation after circulatory death (which has been recognized as an add-on activity) appears extremely challenging, because of logistic, organizational issues so that this activity was suspended in some countries, including Spain where it historically represented a relevant part of the transplantation activity. In the Lombardy Region (Italy), though the incidence of cardiac arrest during the first 40 days of the COVID-19 outbreak (February 21 through March 31, 2020) was high compared to those that occurred during the same period in 2019 (February 21 through April 1), the uncontrolled donation after circulatory death could not be pursued.

The Tuscany Region adopted specific measures to reorganize the health care system to face the COVID-19 outbreak. First, a clear distinction from COVID-19 and no COVID-19 pathways by means of a strict surveillance for patients and staff personnel, and accordingly a precise identification of COVID-19 and no COVID-19 ICUs, surgical, and medical beds in each hospital. Secondly, the use of rapid test assessment for COVID-19 infection all across the whole Tuscany Region to obtain a rapid identification of patients with COVID-19 and patients tested negative for COVID-19.

The uncontrolled donation after circulatory death (uDCD) program was implemented at Careggi teaching hospital since June 2016,³ at Le Scotte Teaching Hospital (Siena) since 2018 and it proved an effectiveness that was comparable to other European countries.^{4,5}

We described the uDCD activity at Careggi Teaching and at Le Scotte Teaching Hospital during the COVID-19 outbreak from March 1 to May 23, 2020.

In Florence, four patients (40%) were identified as potential uDCDs (COVID-19 negative in all). Kidneys were recovered from two uDCDs. Two kidneys were not suitable for transplantation because of high resistance during machine perfusion, while two kidneys were successfully transplanted. Two livers were recovered and one transplanted, since macrosteatosis > 50% was detected in the other one. In Siena, one patient was not enrolled due to longer times.

In Tuscany, the uDCD program proved to be feasible during the COVID-19 pandemic in centers already experienced in this activity, provided they followed a strict application of precise organizational changes. The main key factors that allowed the maintenance of uDCD program were: (a) this activity had been previously implemented, that is, professionals were already familiar with this organ procurement pathway; (b) the availability of rapid COVID-19 testing; and (c) the identification of COVID-19 and no COVID-19 pathways in each hospital.

Conflict of interest

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CL, AP, and DG: conception and design.

VL, SS, PS, LL, FF, and SS: data analysis and interpretation.

CL, AP, FF, and DP: drafting of the article.

CL and AP: critical revision of the article.

ALL AUTHORS: approval of the manuscript.

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