

Heart & Lung I - Heart & Lung

Transplantation of hearts donated after circulatory-determined death

Steven TSUI

Heart transplantation is the best treatment for advanced heart failure, providing recipients with an excellent quality of life and a median post-transplant survival of 12.5 years. However, the severe shortage of donor hearts has meant that only a limited number of patients could benefit from this life-saving treatment.

Over the years, various strategies to increase the number of cadaveric donor organs have been explored. Amongst these, donation after circulatory-determined death (DCD) has provided additional donor organs for kidney, liver and lung transplantation. After a decade-long of intense research efforts involving small and large animal models, novel techniques have been developed to safely retrieve and transplant hearts from DCD donors. These include direct procurement and machine perfusion (DP-MP) and thoracoabdominal normothermic regional perfusion (TANRP). Following early successes in Australia and the United Kingdom, these innovative techniques have now been adopted by many heart transplant centres across Europe and the United States of America. Early and mid-term survivals following DCD heart transplant are comparable with heart transplantation using brain dead donor hearts. To date, over 500 DCD heart transplants have already been carried out worldwide and the annual activity is expected to increase rapidly.

There is now an opportunity for heart transplant centres across Asia to adopt these novel techniques to retrieve DCD hearts and extend heart transplantation to many more patients who are awaiting this life-saving treatment. The logistical and ethical considerations together with the relative merits of DP-MP and TANRP will determine the most appropriate approach for each country.