

NHS BLOOD AND TRANSPLANT

CARDIOTHORACIC ADVISORY GROUP

The interval between brain stem death and cardiac assessment influences the retrieval of hearts for transplantation

INTRODUCTION

The following is the abstract of “The interval between brain stem death and cardiac assessment influences the retrieval of hearts for transplantation”. The manuscript was submitted to the *Journal of Heart and Lung Transplantation* in March 2017.

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ABSTRACT

Background

The optimum time after brain-stem-death (BSD) at which to assess the function of donor hearts is unknown. We hypothesized that a longer interval may be associated with a higher transplantation rate due to improved function.

Method

Data were obtained from the UK Transplant Registry for the period between April 2010 and March 2015. The time when fixed dilated pupils were first noted in the donor was considered as the time of BSD. Retrieval was defined as the time when the abdominal organs were surgically perfused.

Results

BSD to retrieval duration was available for 1,947 donors, of which 458 (24%) donated their heart. In the univariate analysis (not adjusting other donor risk factors), there was evidence to suggest that the BSD to cardiac assessment duration had a non-linear association with heart utilisation ($p < 0.0001$). Adjusting for donor risk factors, the relationship remained with longer intervals being associated with increased transplantation ($p = 0.0056$).

The modelled probability of heart utilisation had a similar pattern to the observed rate of heart utilisation. However, the probability of heart donation began to plateau after approximately 48 hours. Analysis of the subset of donors attended by a cardiothoracic retrieval team showed a similar pattern.

Conclusion

This data suggest that time interval from BSD to organ retrieval influences the heart retrieval rate. When the sole reason for decline a donor heart is poor function, a period of further observation and optimisation up to 2 days should be considered.

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