

Cardiothoracic Organ Offering and Utilisation Behaviours

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The aim of discussion of this paper is to agree, in principle, the following methodologies for the study of donor organ offer acceptance behaviours in UK cardiopulmonary transplantations

1. Prospective observational study of reasons for organ decline
2. Audit of offer declines from organs meeting 'ideal donor' criteria, with clinical review and reporting to centres

Once agreed by CTAG, individual centre directors will be contacted to discuss voluntary participation in the studies

Background to project

Data from the UKTR from 2016-2019, indicate that the adult DBD lung donor offer decline rate is 60.6%, with significant variation in offer decline rates between the 5 UK adult lung transplant centres. Anecdotally considerable variation in organ acceptance and offer decline also exists within centres.

Although reasons for organ offer decline are reported and collected within the UKTR, reporting is incomplete, reasons are documented according to a defined set of drop-down menu options and the value of the documented reasons, for interpretation and understanding of surgeon decision making, is limited. Published literature on decision making in transplantation is focussed on donation and donor families. Where surgeon decision making has been studied, it is limited to cancer practice and multi-disciplinary team processes. Without a better understanding of how surgeons decide which organs to accept for transplantation and which organs to decline, it is difficult to effectively design interventions to target these behaviours and address organ utilisation.

Previous attempts to address high organ decline rates in UK transplantation, have focused on the decline of organs that have been deemed *ideal* or 'high quality', by external clinical review. Where organs have met standard organ criteria, but have been declined, they have been identified, relevant clinical information reviewed and details of this reported back to the declining centre. This process of audit and feedback continues in NHSBT practice for deceased donor renal transplantation. No methods for the evaluation or measurement of the impact of this intervention, on surgeon behaviour, or organ utilisation rates, have been employed. The efficacy of audit and feedback, as a behaviour

change intervention for quality improvement, is related, in part, to how the intervention is designed and implemented and this will be considered within the work outlined here.

Hypothesis

Reasons for decline of cardiothoracic organs in UK cardiopulmonary transplantation are poorly understood. A better understanding of surgeon decision making in organ acceptance and the reasons for organ decline, will facilitate the design of interventions aimed at addressing low utilisation rates in UK Cardiopulmonary transplantation.

Audit, with regular reporting of organ declines to centres, as a behaviour change intervention, will improve organ offer acceptance behaviours and utilisation.

Aim

The aim of this study is to understand the reasons for cardiothoracic organ decline in UK transplantation, and employ feedback and audit as a behaviour change intervention to increase organ acceptance and improve organ utilisation.

Methods

Research questions

Two research questions within this study have been defined:

- i. What are the reasons for decline of Cardiothoracic organs in UK Cardiopulmonary transplantation?
- ii. Will regular review and reporting of organ offer declines to centres improve utilisation rates?

Study design and outline

The study methodology will use the following outline:

1. Analysis of UK Transplant Registry Data of current centre-specific utilisation rates and recorded reasons for offer decline
2. Prospective observational study of reasons for organ decline
3. Audit of offer declines from organs meeting 'ideal donor' criteria, with clinical review and reporting to centres

Analysis of UK Transplant Registry Data of current centre-specific utilisation rates and recorded reasons for offer decline

A retrospective review of the UKTR will be performed, to identify all adult lung donors offers and transplants performed in the UK between January 2002 and December 2019. Lung offers from donors where at least 1 solid organ was donated, will be included in the study.

Prospective observational study of reasons for organ decline

Study population

Participating UK Cardiothoracic centres will be identified through the NHSBT Cardiothoracic Advisory Group (CTAG). A named investigator, in the role of transplant coordinator, will be identified in each centre and consent for participation will be obtained from the centre director and the investigator.

The study period of 3 months is proposed, from January 2021 to March 2021. Data will be collected on all donor lung(s) offers to the centre during the study period, which are declined, following discussion with the on call surgeon.

Data collection

A donor identifier for each declined lung offer will be recorded and later anonymised for data analysis. The reasons for decline of the organ will be documented contemporaneously or within 12 hours, by the nominated co-ordinator investigator. These will be documented as free text verse including the reasons given by the on-call surgeon for decline and the co-ordinators perception of the reason for decline.

Data analysis

A thematic analysis, using the Framework method will be used to analyse qualitative data generated from the observational study. Data will be transcribed from the data collection template and immersion in the data will be achieved by reading and re-reading of transcripts to gain familiarity with the content. Codes will be generated through data reduction, with collapsing of the data into labels to create categories. Codes will be combined to define overarching themes. Data will then be re-read, with application of the generated themes, to ensure that the themes are supported by the data. An index of themes and sub-themes will be created, with participants comments added to the framework in the form of quotes. Themes that make a meaningful contribution to understanding the data, with relevance to the primary research question, will be included in the final report. Member

checking will be performed to ensure that the generated themes accurately describe the information represented in the data.

Quantitative data will be reviewed to identify patterns in organ offer decline. Included in this analysis will be time of organ offering, on-call surgeon, organ (heart, lungs or both) and logistical implications.

Audit of offer declines from organs meeting 'ideal donor' criteria, with clinical review and reporting to centres

Study population

Participating centres will be identified through the Cardiothoracic Advisory group (CTAG).

A monthly audit of data from the UKTR will be used to identify cardiothoracic organ offers that were declined by participating centres. The donor characteristics will be reviewed and offered lung donors meeting *ideal* and *extended* criteria will be highlighted. The outcome of offering for the donor organ will be identified; accepted, transplanted, not transplanted. This information will be disseminated to the centre director of the participating centre.

Data analysis

The centre specific utilisation rates before, during and 6-months after the audit period will be analysed.

A questionnaire measuring the perceived impact of the audit process on centre-level utilisation and organ acceptance behaviours will be conducted at 6- and 12- month points during the audit.

Conclusion

Reasons for the decline of cardiothoracic organs for transplantation are poorly understood. Current recording of organ decline data in the UKTR is not sufficient to identify patterns in acceptance and organ decline behaviour or understand surgeon decision making. The interventions outlined here are aimed at developing an evidence base in decision making to guide targeted interventions in lung donor utilisation.

Planned work

The prospective observational study of reasons for organ decline is now due to commence in January 2021. The audit and reporting of organ offer declines will commence following approval by the

Cardiothoracic Advisory Group (CTAG) lung committee and is scheduled to start no later than Spring 2021. The impact of this intervention on organ utilisation will be reviewed after 1 year.

There is scope for part of this work to be included within the Revaluating Transplant Organs (RETRO) study, as part of the UK Organ Donation and Transplantation Research Network (UKODTRN) initiative in organ utilisation and optimisation, within NHSBT and the British Transplant Society (BTS). This is a pan-organ, pan-specialty research collaborate with plans to adopt and expand this research to abdominal organ utilisation.