Cardiothoracic Organ Perfusion Protocol

Date: Thursday 10th December 2015
Time: 11am – 3pm
Venue: Rooms on Regents Park, 27 Sussex Place, Regent's Park, London NW1 4RG

Teleconference number (for those only participating in one agenda item): 020 772 6389 Pin: 9978

Attendees:

- Steven Tsui (Cardiothoracic Advisory Group) – Joint Chair
- Rutger Ploeg (National Clinical Lead for Organ Retrieval) – Joint Chair
- CT NORS Team Leads and Transplant Programme Clinical Director, or their nominated representatives:
  - Diana Garcia Saez (Harefield)
  - Majid Mukadam (Birmingham)
  - Nawwar Al-Attar (Glasgow)
  - Stephen Clark (Newcastle)
  - Rajamiyer Venkateswaran (Manchester)
  - Marius Berman (Cambridge – NORS Team Lead)
  - [Shah]
- Gabriel Oniscu (Research, Innovation and Novel Technologies Advisory Group) [Note – by teleconference only from 1.15pm]
- Debbie McGuckin (NHSBT Commissioning)
- Ade Bakare (NHSBT Procurement)
- Claire Williment (NHSBT Head of Transplant Development)

Items discussed and agreed:

1. **T3**

There is no evidence that the use of T3 will help with the optimisation of cardiac donors. It should be removed from the donor care bundle utilised by SN-ODs and CLODs. Use of T3 in selected cardiac donors at the discretion of the retrieval team is permitted but not mandated.

2. **Donor hearts:**

- No change to current practice regarding where to vent the IVC – chest or abdomen as agreed by the NORS teams present.
- Hearts:
  - Solution: St Thomas' (Sterile Concentrate for Cardioplegia Infuion in 1 litre of Ringers solution). Solution should be used for national shared CT organs.
  - Volume:

        - For donors 30-70 Kg donor weight, provide 1 litre of reconstituted Cardioplegia solution.
        - Donors >70 Kg, use 1.5 L.
        - At the discretion of the recipient surgeon request, it is possible to change the standard dose dependent on logistics and/ or donor physiology.
    - Pressure: To be confirmed.
    - Medication: 30,000 units heparin IV
    - Packing
        - Inner bag: Saline 2 L
        - 2nd bag: Saline 2 L
        - Outer bag: Saline 2 L

3. Donor Lungs:

- Solution: Perfadex
- Volume: 50 - 75ml/Kg.
- Temperature: DBD and DCD: First 1L at room temperature, the rest of fluids cold.
- Prostacycline:
    - For DBD donors, systemic heparinisation by the anaesthetists and then 10ml of Flolan injected slowly into pulmonary artery prior to cross-clamping.
    - For DCD donors, heparin injected into the PA by retrieval surgeon directly followed by 10ml of Flolan.
- Technique: 24 French straight cannulae in PA with pneumoplegia bag 25cm above the donor.
- Oxygenation: limit 50% FiO2.
- Lung inflation (airway pressure): 15 – 20 cmH_2O
- Storage:
    - Inner bag: Saline 2 L
    - 2nd bag: Saline 2 L
    - Outer bag: Saline 2 L

4. NRP:

- For DCD donors requiring NRP, offer CT retrieval surgeons the two option of:
    a) Immediate lung retrieval with meticulous haemostasis or
    b) Delayed lung retrieval until the end of NRP. This requires clamping of the donor arch vessels to prevent restoration of donor cerebral circulation and decompression of the donor heart (vent insertion and Y to venous line of NRP circuit if required)
- Agreement between local teams regarding who will cannulate, but perfusion will not commence until neck and head vessels have been clamped.
- The approach for NRP must be tailored to the experience of those present. Options are:
    - Experienced CT retrieval surgeon will remove lungs immediately and achieve haemostasis.
    - Less experienced CT retrieval surgeons will either:

a) NRP cannulation in the thorax and cross clamp the arch vessels or
b) Cross clamp the arch vessels and let the abdominal team cannulate the abdominal vessels to establish NRP

5. Reducing Ischaemia Time of Donor Heart

Option to plege and remove donor heart, bag and dispatch before pneumoplegia and lung removal (using two Foley catheters into the right and left pulmonary arteries for pneumoplegia delivery after the heart has been excised). This will be left at the discretion of the CT retrieval surgeon