

## APPENDIX 5

### Donor Heart Perfusion & Preservation Protocol for NORS Teams in the UK

1. Systemic~~ally~~ anticoagulate donors with 30,000 units of IV heparin
2. Venting of the IVC (chest or abdomen) as agreed between the NORS teams present
3. Donor heart preservation solution:
  - a. Sterile Concentrate for Cardioplegia Infusion (SCfCI, Martindale Pharma<sup>®</sup>) should be used for all national shared donor hearts
  - b. This will be diluted by adding 20ml of SCfCI ~~Sterile Concentrate for Cardioplegia Infusion~~ to 1 litre of Ringers solution
4. Volume:
  - a. Donors 30-70 Kg donor weight, administer 1 litre of reconstituted Cardioplegia solution
  - b. Donors >70 Kg, administer 1.5 L of reconstituted Cardioplegia solution
  - c. At the request of the **recipient** transplant surgeon, it is permissible to change the above doses dependent on logistics and/or donor physiology
5. Pressure: ~~To be confirmed~~60-90 mmHg
6. Storage of donor heart for transport:
  - a. Inner bag: Saline 2 L
  - b. 2nd bag: Saline 2 L
  - c. Outer bag: Saline 2 L

## APPENDIX 6

### Donor Lung Perfusion & Preservation Protocol for NORS Teams in the UK

1. Systemic<sup>ally</sup> anticoagulate donors with 30,000 units of IV heparin
2. Donor lung preservation solution: Perfadex<sup>®</sup> Plus
3. Volume: 50 - 75ml/Kg (see table below)

Donor Wt (Kg)	Antegrade Vol (L)	Retrograde Vol (L)	Total Vol (L)	Number of 1L bags required
21-40	1.0	1.0	2.0 (50-95 ml/kg)	2
41-60	2.0	1.0	3.0 (50-73 ml/kg)	3
61-80	3.0	1.0	4.0 (50-67 ml/kg)	4
81-100	4.0	1.0	5.0 (50-62 ml/kg)	5
101-120	5.0	1.0	6.0 (50-59 ml/kg)	6
121-140	6.0	1.0	7.0 (50-58 ml/kg)	7

4. Temperature for both DBD and DCD donor lungs:
  - a. 1st 1L at room temperature
  - b. the rest of fluids cold
5. Prostacycline (Flolan):
  - a. For DBD donors, systemic heparinisation by the anaesthetists and then 10ml of Flolan injected slowly into pulmonary artery prior to cross clamping.
  - b. For DCD donors, heparin injected into the pulmonary artery by retrieval surgeon directly followed by 10ml of Flolan.
6. Technique:
  - a. Insert a straight 24 Fr cannula in pulmonary artery
  - b. Place lung perfusion fluid bags 25cm above the donor or use delivery pressure of 25 mmHg
  - c. Preservation solution is delivered in two phases:
    - i. Antegrade for all bags except for the final 1L
    - ii. The final 1L bag is administered retrograde - the antegrade cannula is removed from the PA and placed into each pulmonary vein in turn
    - iii. Prior to the retrograde flush, the heart is excised and the pulmonary trunk transected just proximal to its bifurcation
    - iv. The retrograde phase consists of delivering 250 mls of perfusion fluid into each pulmonary vein in turn. This is done by pinching the cannula between the fingers so as to prevent the pneumoplegia from leaking back into the left atrium.
7. Lung inflation:
  - a.  $FiO_2 = 0.5$
  - b. Airway pressure = 15–20 cmH<sub>2</sub>O
8. Storage of donor lungs for transportation:
  - a. Inner bag: Saline 2 L
  - b. 2nd bag: Saline 2 L
  - c. Outer bag: Saline 2 L

#### PREPARATION OF PERFADEX

- ~~1.~~ Shelf life of 3 years at pH 5.5
- ~~2.~~1. Store at ~~302-25°~~ C
- ~~3.~~2. DO NOT add any drugs or buffering agents to the Perfadex bags until it is finally confirmed that lungs are being retrieved
- ~~4.~~3. Once the Perfadex® Plus container is opened and additives have been added the solution must be kept cold and used within 24 hours

**Additives** (see table below)

**1. No THAM or Calcium is required (Perfadex® Plus is pre-supplemented with THAM and calcium)**

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~~1. Prior to administration, the pH needs to be buffered upwards to 7.4 by the addition of THAM/TRIS (Tromethamine) for all bags~~

~~a. THAM ————— 1.6 ml for each 1.0 L bag~~

~~2. Calcium chloride is also added:~~

~~a. Calcium chloride ——— 0.5 ml for each 1.0 L bag~~

~~3-2. The first 1.0L Perfadex® Plus bags should also contain:~~

~~a. Prostacyclin 500 mcg~~

~~b. GTN 25 mg diluted in 50 mL of supplied diluent~~

~~4. The Perfadex bags must be labeled either~~

~~a. "With ALL drugs" or~~

~~b. "With Ca<sup>++</sup> & THAM only"~~

~~5-3. Drugs should be added to the bags individually, giving each bag a good shake to mix~~

~~4. Once additives are used or the container is opened the contents should be chilled and used within 24 hours.~~

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~~5. Ensure that the Perfadex® Plus bag is not in direct contact with ice.~~

~~6. Return Perfadex bags 2-7 in the ice box after adding drugs until required~~

	Bag 1	Bag 2	Bag 3	Bag 4	Bag 5	Bag 6	Bag 7
Temperature	Room	Cold	Cold	Cold	Cold	Cold	Cold
Prostacyclin	Yes	-	-	-	-	-	-
GTN	Yes	-	-	-	-	-	-

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Calcium Chloride	Yes	Yes	Yes	Yes	Yes	Yes	Yes
THAM	Yes	Yes	Yes	Yes	Yes	Yes	Yes