MPD1420/4 – Cardiothoracic Perfusion and Preservation

Policy

Organ Preservation Practitioners (OPPs) working as part of the National Organ Retrieval Service (NORS) cardiothoracic retrieval teams will facilitate cardiothoracic organ perfusion and preservation in theatre during the organ retrieval operation. This function supports the surgical team in ensuring the safe and efficient retrieval of organs for transplantation and removal of organs for other/scheduled purposes.

Objective

To provide the OPP with the appropriate information and guidance in cardiothoracic perfusion.

Changes in this version

Inclusion of Research labels and when to use

Roles

- **Cardiothoracic Organ Preservation Practitioner -** To work to this MPD in undertaking cardiothoracic organ perfusion and preservation during the organ retrieval/removal process, under the advice and guidance of the Lead Cardiothoracic Retrieval Surgeon from NORS.

To work collaboratively with the Specialist Nurse for Organ Donation (SNOD) in ensuring that all organs, tissues and blood samples retrieved for transplant and other/scheduled purposes are correctly packaged and labelled for transportation.

1. Introduction

1.1. Cardiothoracic organ perfusion and preservation is the process of perfusing organs with preservation solutions, as directed by the lead cardiothoracic retrieval surgeon during the organ retrieval/removal operation. It involves perfusing the organs firstly in-situ and if required after they have been removed from the body, perfusing them again on the 'back bench'. Perfusion will be performed on organs being retrieved for transplantation and organs being removed for other/scheduled purposes. (**SOP5567** - Process for consent for Removal and Storage of Organs/Tissue/Samples for Research and Other Scheduled Purposes in QUOD Licensed Hospitals Only) (**SOP5663** - Process for authorisation for the removal and storage of specific organ/tissue/samples for research and other purposes).

1.2. Packaging of the Organs and placement in the organ transport boxes are important components of organ preservation. Procurement of blood, vessels and tissue samples to support organ transplantation and other/scheduled purposes are an essential aspect in providing positive outcomes for transplant and other/scheduled purposes outcomes.

1.3. Different perfusion fluids are used depending on which organs are being retrieved and volumes will vary dependant on the size and weight of the donor. This outlines the role of the OPP in cardiothoracic organ perfusion and preservation during the organ retrieval/removal operation.

1.4. Organ perfusion and preservation is the responsibility of a registered medical practitioner. In the case of NORS, this is the nominated lead cardiothoracic retrieval surgeon. Therefore, when involved in organ perfusion and preservation, the OPP will work under the advice and direction of the lead cardiothoracic retrieval surgeon.

2. NORS

2.1. The NORS team should include the minimum roles, a lead cardiothoracic retrieval surgeon, a surgical assistant, scrub practitioner and organ preservation practitioner.

2.2. The NORS team is responsible for providing all equipment, consumables and pharmaceuticals required for organ perfusion and preservation of organs being retrieved for transplantation and those being removed for other/scheduled purposes. Boxes, Ice and perfusion fluid must be included for organs being removed for other/scheduled purposes.

2.3. The SNOD is responsible for obtaining and labelling blood samples prior to theatre. The OPP is responsible for obtaining any additional bloods requested by the recipient centre. The OPP is responsible for obtaining tissue samples to support organ transplantation and other/scheduled purposes.

2.4. The NORS team OPP is responsible for completing the timings and perfusion section on the HTA-A form and HTA-A Research form. The SNOD will complete the donor demographics.

2.5. The HTA-A form will accompany organs retrieved for transplant. The HTA-A Research form will accompany organs removed for other/scheduled purposes.

2.6. The OPP will provide the appropriate organ specific colour coded organ box label

2.7. The OPP will provide an orange research organ box label if appropriate, if however the colour coded transplant label is already attached, then the organ declined, there is no requirement to change the label

2.8. The NORS team OPP is responsible for the packaging, sealing and labelling of boxes containing organs for transplant and other/scheduled purposes ready for dispatch.

2.9. The NORS team OPP is responsible for the immediate dispatch of organs to recipient centres, if however, the OPP is still required in theatre this responsibility can be handed over to the SNOD.

3. Specialist Nurse in Organ Donation (SNOD)

3.1. The SNOD will maintain a presence in theatre to ensure continued co-ordination of the retrieval process.

3.2. The SNOD will record all essential timings on the white board in theatre visible for all team members to see.

3.3. The SNOD will ensure that the core donor information has been fully completed on DonorPath.

3.4. The SNOD will advise the organs to be retrieved for transplant at the donor handover.

3.5. The SNOD will complete the Donor demographic section on the HTA-A form and HTA-A Research form.

3.6. The SNOD will ensure a copy of the donors' blood group form is provided for the OPP for organs being retrieved for transplant and for those being removed for other/scheduled purposes.

3.7. The SNOD is responsible for the completion of the Organ Handover Form (**FRM4217**).

3.8. The research transport driver will provide the SNOD with the following PID to ensure

- collection of the correct organs:
- ODT Number
- Organ
- Researchers delivery address, this will be provided to the SNOD by HUB operations

3.9. The SNOD may be requested to dispatch the organs if the NORS OPP is still required in theatre.

4. Cardiothoracic Organ Perfusion and Preservation flow chart

Confirm with the lead cardiothoracic retrieval surgeon what preservation fluids and volumes are required for retrieval of organs for transplant and removal of organs for other/scheduled purposes

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As directed by lead cardiothoracic surgeon: Prepare cardioplegia/Pneumoplegia lines. Start perfusion when directed by retrieval surgeon

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DBD

Prepare Perfusion line when organ suitability is confirmed

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Obtain any additional blood and urine samples prior to cross-clamp (including those required for other/scheduled purposes e.g. OUOD, etc.)

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Ask Anaesthetist to administer anticoagulant and antibiotics as agreed with lead retrieval surgeon

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DCD

Prepare Perfusion line(s) prior to withdrawal of life sustaining treatment

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Ask SNOD to obtain any additional blood and urine samples prior to withdrawal of life sustaining treatment

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Add anticoagulants to the perfusion line(s) as agreed with the lead retrieval surgeon

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Place prepared perfusion line(s) into ice box to keep cold. In conjunction with the scrub practitioner ensure that sterile process is followed and no air in lines.

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Prepare Organ transport boxes with ice in readiness to receive organs. Label and place blood samples into organ boxes as required.

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Commence in-situ perfusion when directed by the lead retrieval surgeon. Ensure that exact timings are recorded with fluid volumes and batch numbers used. Ensure that SNOD is informed of exact cross-clamp time.

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Inform lead retrieval surgeon when each perfusion bag is complete, how the perfusion is running (fast/slow) and if you encounter any problems.

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Prepare additional fluids in preparation for ex-situ (back bench) perfusion of retrieved/removed organs (if required) using single lumen giving set. Provide support to lead surgeon in back bench perfusion in line with national protocol

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Receive packed organs, tissues (lymph nodes, spleen etc.), vessels and biopsies (including those required for other/scheduled purposes) from scrubbed NORS team members and place in appropriate organ transport box, ensuring that all tissue samples are appropriately labelled.

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Ensure that correct timings, perfusion fluid, volume and LOT numbers are recorded on the HTA forms. Check that the contents of the organ box are present and correct (organ, bloods, tissues, documentation etc.) seal the box.

If the organ is not returning with the NORS team, then the OPP must dispatch the organ immediately or if busy hand over to the SNOD for immediate dispatch to recipient centre.

Definitions

- **Scheduled Purpose** - In the Human Tissue Act (2004), a licence is generally required if an activity is being undertaken for what the Act calls a scheduled purpose. Consent is required to use human tissue for these purposes. The Scheduled Purposes which apply are: Transplantation, Research, Clinical Audit, Education or training related to human health, Performance Assessment, Public Health Monitoring and Quality Assurance.
- **Other Purpose** - The Human Tissue (Scotland) Act 2006 states “part of the body of a deceased person may be removed from the body and used, for the purposes of: (a) transplantation, (b) research, (c) education or training (d) audit.”

Related Documents / References

- **FRM4217** - Organ Handover Form
- **SOP5563** - Process for authorisation for the removal and storage of specific organ/tissue/samples for research and other purposes
- **SOP5567** - Process for consent for Removal and Storage of Organs/Tissue/Samples for Research and Other Scheduled Purposes in QUOD Licensed Hospitals Only