

Sentinel Flaps for the Assessment of Acute Rejection Following Lung Transplantation

REVISED RESEARCH PROFILE

Background

Brief Description of Program: Early rejection in lung transplantation is currently assessed by performing lung biopsies which are very inaccurate and carry high risks. Safer methods are required to diagnose rejection in lung transplant patients and to reduce these risks. A skin flap obtained from the lung donor will be transplanted into the recipient's arm and monitored. In the future, this approach may allow for earlier diagnosis of rejection preventing risks associated with lung biopsies and will guide treatment.

Program: Toronto Lung Transplant Program (TLTP), University Health Network (UHN)

Contact Person(s) & Contact Information:

Primary Contact: Dr Siba Haykal cell: 647-323-7422

Secondary contact: Dr. Stephen Juvet cell : 647-501-9125

Offering Information:

Inclusion:

1. Adult double lung donors whose recipient has consented to participate in this research.
2. NDD donors only.
3. Local donors only (ground transportation, ischemic time limited to 6 hours).
4. TLTP fellows will assess for donor & recipient skin tone match, as required, prior to recovery.

Exclusion:

1. Bilateral volar forearm tattoos or scars on donor in area of flap recovery.
2. Cannulated radial artery and/or cephalic vein preventing recovery.
3. Non-palpable radial pulse bilaterally.

Consent Considerations: Requires consent for Scientific Research from the donor NOK, "spleen specimen" and "skin specimen" should be specifically indicated on the TGLN consent form. Suggested script: *"We are looking into a safe way of reducing the risk of rejection of lungs in recipients. The lung team would like a small piece of skin from the forearm of your loved one and a spleen sample to help us determine this."*

Recovery & Requirements for Perfusion

COVID CONSIDERATIONS

Transportation: TGLN and transplant programs have worked together to limit the number of people travelling in each vehicle to allow spacing and minimize risk. Therefore, the plastic surgery skin flap team will make their own transportation arrangements to and from the donor OR.

Personal Protective Equipment: The plastic surgery skin flap team will supply their own N95 masks.

Method:

TGLN surgical recovery coordinator (SRC) will bring an extra 1L of Perfadex for the recovery of the skin flap.

Plastic surgery skin flap team will transport a separate cooler (for the skin flap) with them.

50mL of donor blood will be collected & appropriately labelled by the TLTP surgical fellows in the donor OR.

A spleen sample will be collected and appropriately labelled by the TLTP surgical fellows in the donor OR.

A skin flap will be collected and appropriately labelled by the plastic surgery skin flap team in the donor OR.

TGLN SRC will assist in labelling the skin flap (internal label* attached to the bag it is stored in, and an exterior label* on the outside of the cooler). The skin flap will be a flap similar to the radial forearm flap

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commonly procured by plastic surgeons. This involves an 8 cm X 3 cm skin paddle, subcutaneous tissue and the radial artery, vena comitantes and cephalic vein. The donor forearm wound will be closed and a dressing applied. The skin flap will be triple bagged and stored in the inner most bag with ~1 L of perfadex solution.

The blood and spleen will be transported with the lungs to UHN by the TLTP procurement team.

The skin flap along with a copy of the Lung Transplant Operating Room Data (CSF-9-43) sheet, with lung crossed out and SKIN FLAP written on it, will be transported to UHN by the plastic surgery skin flap team.

***Interior label:**

TGLN ID#: (indicate the donor ID here)

Organ/Composite Tissue: SKIN FLAP

Hazardous material symbol: NO

Organ/Composite Tissue Label Completed by:

***Exterior label:**

SOURCE ESTABLISHMENT = TRILLIUM GIFT OF LIFE NETWORK

Hazardous material symbol: NO

ORGAN / COMPOSTIE TISSUE: SKIN FLAP

Retrieval Establishment: (provide the plastic surgery skin flap team information)

TRANSPLANT ESTABLISHMENT = Toronto General Hospital

Impact on Transplant/ Recovery Procedure: Procedure does not change from normal recovery procedure for organs. Skin flap will be recovered simultaneously with lung/other organs. **No additional time is required**

Effect on Body / Post-Mortem Care: None

Recovery Personnel: TLTP surgical fellows. Plastic surgery skin flap team

Credentialing: As per PRC database.