

# Anesthesia Protocol for Lung Transplantation

## Vascular Access and Monitoring

1. Minimum of one large bore (14G, 16G) peripheral IV.
2. Radial arterial line placed under sterile conditions.
3. Central Venous Access - RIJ SvO<sub>2</sub> PA catheter.
4. ASA standard monitors - NIBP, EKG (backpack, 3-lead, or 5-lead), Pulse Ox, Temperature probe (oral and rectal).
5. TEE probe - barring any contraindication to placement of probe.
6. Double lumen ETT or Single lumen ETT with Bronchial blocker required for all lung transplants, single or double, with or without CPB.

## Antibiotics

Zosyn 4.5mg IV in preop. If Penicillin allergy, use Cipro 400mg IV and Flagyl 500mg IV.

## Anesthetic Plan

1. General Anesthesia - Midazolam, Etomidate (0.2-0.3mg/kg), Pancuronium/Vecuronium (0.1mg/kg), Sufentanil for induction. Maintenance with O<sub>2</sub>, Isoflurane, Propofol if on Cardiopulmonary Bypass (CPB) at dose of 50-100 mcg/kg/min.
2. Positioning - Lateral Decubitus with bean-bag, axillary roll, over-arm board, for single lung transplant.
3. One lung ventilation via Left sided Double Lumen Tube. Pediatric fiberoptic bronchoscope required for placement. For Left sided transplant, be prepared to pull DLT back to avoid it being incorporated into suture line of left bronchus.
4. Inhaled prostaglandin and Nitric Oxide may be required to avoid CPB, or post-CPB, Respiratory therapy requires lead-time to set-up/calibrate equipment, so they should be notified in advance that Nitric Oxide/Prostaglandin may be needed. Specific protocols per respiratory therapy and OR anesthesia manuals.
5. Possible Fem-Fem cardiopulmonary bypass (CPB) - dependent on patient's EV function, PA pressures and intra-op PA occlusion test. Check that PA catheter still moves freely during test PA occlusion, to avoid PA catheter being clamped.
6. Solumedrol - 500mg prior to unclamping of vascular anastomoses.
7. Inotropes - may be employed for non-CPB cases or for separation from CPB.
  - Dopamine
  - Nitroglycerin
  - Milrinone (Primacor)
  - Norepinephrine(Levophed)
8. Fluid Management - patients are run "dry" to avoid pulmonary edema. Pressors may be required to keep BP up and CVP low (12-15)

## Post-Operative

1. Exchange of DLT to special single lumen mallinkrodt Hi-Lo ETT. Have tubechanger available.
2. Transport to ICU intubated, on 100% O<sub>2</sub>, with A-line, EKG monitored. Ventilator settings in ICU managed by Pulmonologist.
3. Pain Management - Thoracic epidural can be placed pre or post-operatively, managed by Anesthesia Pain Service.