OPEN ACCESS Freely available online

ISSN: 2573-4598
Journal of
Patient Care

Perspective

Lung Transplantation and Perioperative Treatment for Lung Transplant Patients

Ishiguro Mieko*

Department of Pulmonary, Tohoku University, Sendai, Japan

DESCRIPTION

A lung transplant is a surgical operation in which a healthy lung from a deceased donor is substituted for a sick or failing lung. Candidates for a lung transplant include those whose diseases have not substantially improved despite trying drugs or other therapies. It may be difficult for patient body to obtain the oxygen it needs to survive lung disease or damage. Patient's lungs can be damaged and rendered incapable of functioning properly by a number of illnesses and conditions.

Perioperative treatment for lung transplant patients

Perioperative treatment of lung transplant recipients is a difficult task. Mechanical ventilation and weaning strategies, fluid management, and immunosuppression including induction therapy, rejection management, perioperative antibiotics, antimicrobial prophylaxis, chest tube management, nutritional support, discharge planning, and education are all critical components. Highly sensitised transplant candidates, defined as those with a high titer of preexisting Human leukocyte antigen (HLA) Donor-Specific Antibodies (DSA), present special challenges that necessitate specialised perioperative management.

The objectives of perioperative ventilator support for lung transplantation depend on delivering sufficient minute ventilation while avoiding oxygen toxicity, barotrauma, and volutrauma. Acute Right Ventricular (RV) decompensation due to volume overload, decreased RV preload and low cardiac output, especially in the hypovolemic patient, Trendelenburg positioning, and medication-induced hypercarbia, hypoxia, and systemic hypotension leading to an acute exacerbation of preexisting Pulmonary Hypertension (PHTN) or severe new-onset hypertension. Hemodynamics can rapidly deteriorate in these patients, requiring intrusive arterial blood pressure monitoring. Because hypothermia increases Pulmonary Vascular Resistance (PVR), temperature monitoring is essential. The pulmonary artery catheter can be used to assess core temperature. A double-lumen endotracheal tube or a single-lumen tube with a bronchial blocker, if a double-lumen tube cannot be passed effectively, are two choices for orotracheal intubation for selective lung breathing after induction. The right intubation approach depends on surgical technique, namely if Cardiopulmonary Bypass (CPB) support will be used during the procedure, and laterality in single-lung transplant instances. Prior to induction, the surgical team should discuss the intubation plan. In order to maintain low arterial CO_2 tension and avoid hypoxemia, the initial ventilator parameters are modified in accordance with the Arterial Blood Gas (ABG).

Tidal volume of 6-7 cc/kg body weight, a Positive End-Expiratory Pressure (PEEP) of 5 cm H_2O, a respiratory rate of 14/min, an inspired oxygen concentration to maintain arterial oxygen saturation above 95%, and an inspiration to expiration ratio of 1:2 are recommended parameters, especially for Chronic Obstructive Pulmonary Disease (COPD) patients. If the haemoglobin level is below 10 g/dL, leukocyte-depleted packed red blood cells are used to achieve volume resuscitation; if the haemoglobin level is over 10 g/dL, colloid (albumin 5%) is used instead of crystalloid. Due to the possibility of allergic sensitization, blood transfusions are kept to a minimum. Before induction, sedative medications should only be used with caution because even a mild respiratory depression can raise PVR and cause an immediate RV decompensation. Anesthesia management is guided by Pulmonary Artery (PA) pressure monitoring, particularly in high-risk patients, using a Swan-Ganz catheter or Transesophageal Echocardiography (TEE). At the authors' institution, TEE monitoring is routinely done in all patients (unless contraindicated) to assess ventricular filling, ventricular function, and Patent Foramen Ovale (PFO) status and to make sure the Swan-Ganz catheter tip is positioned correctly in the main PA to prevent unintentional catheter entrapment on clamping either branch PA. The assisting anesthesiologist directs the placement of the probe. Avoiding hypotension, bradycardia/tachycardia are all examples of hemodynamic goals. The target heart rates are 60-100 beats per minute and 70-75 mmHg, respectively. Patients with pulmonary

Correspondence to: Ishiguro Mieko, Department of Pulmonary, Tohoku University, Sendai, Japan, E-mail: imiek@gmail.com

Received: 04-Nov-2022, Manuscript No. JPC-22-19059; **Editor assigned:** 07-Nov-2022, PreQC No. JPC-22-19059 (PQ); **Reviewed:** 21- Nov-2022, QC No. JPC-22-19059; **Revised:** 28-Nov-2022, Manuscript No. JPC-22-19059 (R); **Published:** 05-Dec-2022, DOI: 10.35248/2573-4598.22.8.205

Citation: Mieko I (2022) Lung Transplantation and Perioperative Treatment for Lung Transplant Patients. J Pat Care.8:205.

hypertension or RV dysfunction that is either visible or has a preoperative history should have an epinephrine infusion prepared and begun (at a rate of 2-4 m/min). An Arterial Blood Gas (ABG), a mixed venous blood gas from the Swan-Ganz catheter's PA port, and measurement of a thermodilution cardiac output are all part of the baseline physiological examination. Inhaled pulmonary vasodilator therapy, such as Inhaled Nitric Oxide (INO) at 20 ppm, is used for all lung transplants at the authors' facility and is started after intubation.

In benefits of a lung transplant, the overall quality of life is improved with lung transplant. The following are the primary benefits of lung transplantation: longer life expectancy after receiving a lung transplant, over 55% of patients survives for at least five years. Others who get benefits continue to live for 10, even 20 years. Many recipients of lung transplants report having greater energy to engage in regular activities. Exercises and other physical activities are examples of activities. Boost fertility. Having a baby after a lung transplant is conceivable. After a lung transplant, many women and AFABs (Assigned Female/Male at birth) report that their fertility has risen. Inquire with doctor about the dangers of attempting to get pregnant following a lung transplant.