

Lung transplantation: Contraindications, Medical tests and Types

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Abstract

Lung transplantation, or pulmonary transplantation, may be a surgery during which a patient's diseased lungs are partially or totally replaced by lungs which come from a donor. Donor lungs are often retrieved from a living donor or a deceased donor. A living donor can only donate one lung lobe. With some lung diseases, a recipient may only get to receive one lung. With other lung diseases like CF, it's imperative that a recipient receive two lungs. While lung transplants carry certain associated risks, they will also extend anticipation and enhance the standard of life for end-stage pulmonary patients.

Contraindications

- Despite the severity of a patient's respiratory condition, certain pre-existing conditions may make an individual a poor candidate for lung transplantation.
- Concurrent chronic illness (e.g., congestive coronary failure, renal disorder, liver disease)
- Current infections, including HIV and hepatitis
- However, more and more often, hepatitis C patients are both being transplanted and also are getting used as donors if the recipient is hepatitis C positive. Similarly, select HIV-infected individuals have received lung transplants after being evaluated on a case-by-case basis.
- Current or recent cancer
- Current use of alcohol, tobacco or illegal drugs
- Age
- Psychiatric conditions
- History of noncompliance with medical instructions

Medical tests for potential transplant candidates

- Patients who are being considered for placement on the transplant list undergo extensive medical tests to gauge their overall health status and suitability for transplant surgery.
- Blood typing; the recipient's blood group must match the donor's, thanks to antigens that are present on donated lungs. A mismatch of blood group can cause a robust response by the system and subsequent rejection of the transplanted organs
- Tissue typing; ideally, the lung tissue would also match as closely as possible between the donor and therefore the recipient, but the will to seek out a highly compatible donor organ must be balanced against the patient's immediacy of need
- Chest X-ray – PA & LAT, to verify the dimensions of the lungs and therefore the thoracic cavity
- Pulmonary function tests
- CT Scan (High Resolution Thoracic & Abdominal)
- Bone mineral density scan
- MUGA (Gated cardiac blood pool scan)

- Cardiac assay (Dobutamine/Thallium scan)
- Ventilation/perfusion (V/Q) scan
- Electrocardiogram
- Cardiac catheterization
- Echocardiogram

Types of lung transplant

Lobe

A lobe transplant may be a surgery during which a part of a living or deceased donor's lung is removed and wont to replace the recipient's diseased lung. In living donation, this procedure requires the donation of lobes from two different people, replacing a lung on all sides of the recipient. Donors who are properly screened should be ready to maintain a traditional quality of life despite the reduction in lung volume. In deceased lobar transplantation, one donor can provide both lobes.

Single-lung transplant

Many patients are often helped by the transplantation of one healthy lung. The donated lung typically comes from a donor who has been pronounced brain-dead.

Double-lung transplant

Certain patients may require both lungs to get replaced. This is often especially the case for people with CF, thanks to the bacterial colonization commonly found within such patients' lungs; if just one lung were transplanted, bacteria within the native lung could potentially infect the newly transplanted organ.

Heart-lung transplant

Some respiratory patients can also have severe cardiac disease which might necessitate a heart transplant. These patients are often treated by a

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surgery during which both lungs and therefore the heart are replaced by organs from a donor or donors.

A particularly involved example of this has been termed a "domino transplant" within the media. First performed in 1987, this sort of transplant typically involves the transplantation of a heart and lungs into recipient A, whose own healthy heart is removed and transplanted into recipient B.

Signs of rejection

- Fever

- Flu-like symptoms, including chills, dizziness, nausea, general feeling of illness, night sweats
- Increased difficulty in breathing
- Worsening pulmonary test results
- Increased pain or tenderness
- Increase or decrease in weight of quite two kilograms during a 24-hour period.