

Lung Transplantation

The lung transplantation is a very complicated life saving surgery. It is usually the last kind of therapeutic procedure by patients in end stage of a lung disease (e.g COPD, bronchiolitis obliterans). The lung can be replaced partially or totally or together with heart. The first lung transplantation was performed by James Hardy in 1963, the patient died after 18 days.^[1] The patients in 2011 have chance to live 20 years longer.^[2]

Epidemiology

Over 1700 patients in the world undergo this surgery every year. The median waiting time for transplantation is over 1000 days.

Types of lung transplant

Heart lung transplantation

The complex of heart and lung is removed from one dead donor. Indications include heart and lung diseases – lung parenchymal disability associated with impairment of myocardium or inoperable valve disease.^[3]

Bilateral lung transplantation

The lungs are removed from dead donor. Indications are e.g. idiopathic pulmonary fibrosis (IPF), cystic fibrosis (CF), α_1 -antitrypsin deficiency emphysema.^[3]

Single lung transplantation

The lung is removed from dead donor. Indications include COPD, bronchiolitis obliterans, emphysema.^[3]

Lobe transplantation

The lobe is removed from living donor, usually donors. The donors must be screened and informed that they will have normal quality of life after resection.^[3]

Indications

The indication for the lung transplantation usually is end-stage of lung disease which includes chronic obstructive pulmonary disease (COPD), idiopathic pulmonary fibrosis (IPF), cystic fibrosis (CF), α_1 -antitrypsin deficiency emphysema and primary pulmonary hypertension (PPH). The most often indication for lung transplantation generally (includes single and bilateral lung transplantation) is COPD (38.5%), the second most often indication is IPF (17.4%) and CF (16.6%). The most often indication for bilateral lung transplantation is CF (31.9%).^[4]

Contraindications

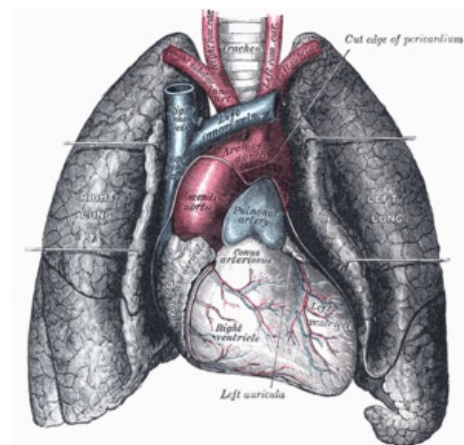
Absolute contraindications include^[5]:

- serious kidney or liver dysfunction;
- active extrapulmonary infection;
- current abuse of narcotics, alcohol or tobacco;
- progressive neuromuscular disease;
- active malignancy in last 2 years (but in special cases more than 5 years – melanoma level III and higher, colon cancer higher than Duke A, breast cancer stage 2 and higher and extracapsular renal tumors).

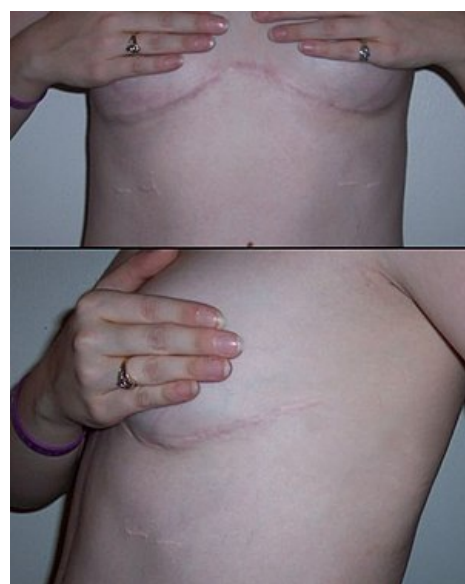
Relative contraindications are^[5]:

- medical condition of the patient;
- end stage organ damage;
- systemic hypertension;
- diabetes mellitus;
- peptic ulcer disease.

Other risk factors are:



Lunges – syntopy



Scars after bilateral lung transplant

- osteoporosis → post-transplant bone fractures;
- morbid obesity or cachexia → is associated with increased postoperative mortality.

Links

Related articles

- Transplantation
- Transplant rejection
- Genetics of Transplantations
- Liver transplantation
- Kidney transplantation

References

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5. GLANVILLE, A R – ESTENNE, M. Indications, patient selection and timing of referral for lung transplantation. *Eur Respir J* [online]. 2003, vol. 22, no. 5, p. 845-52, Available from <<http://www.ncbi.nlm.nih.gov/pubmed/14621095>>. ISSN 0903-1936.