Since the first successful lung transplant in 1983 by Joel Cooper and colleagues slow but significant advances have been achieved in this field. So far, approximatively 45,000 recipients have benefitted from this procedure worldwide, and about 4,000 new lung transplants are being performed annually, with an increasing number of centres involved around the world. Increased technical expertise and advances in perioperative care and immunosuppression therapy have led to improved short and long-term survival. Despite significant progresses and successes observed in the last 35 years, several limitations still persist and some challenging problems remain unsolved. Paucity of available donors with still significant mortality for patients in the waiting list, poorer outcome if compared with other solid organs transplant, and still consistent perioperative morbidity represent main critical issues in this setting, which physicians operating in this field have to deal with.

However, lung transplant is currently the only viable treatment for many patients with end stage pulmonary disease not responding to medical or surgical therapies, and patients continue to become sicker and more complex in their comorbidities.

The present volume represents an outstanding overview on main topics in the field of lung transplantation with contributions by authors from some of main centres in the world, which have contributed to advances achieved over last decades.

Immunosuppressive regimens have significantly contributed to the improvement of survival after lung transplantation. Data concerning the use of these agents have been effectively summarized by the Columbia University group pointing out the need for randomized clinical trials to allow the development of better regimens and reduce morbidity and mortality for recipients.

Scientific research in the murine model has been largely developed in recent years and provides great opportunities to understand mechanisms that affect lung allograft survival and explore new therapies. Scientific uses, technical tricks and advances of orthotopic lung transplantation and of retransplantation in the mouse have been described in this volume by the scientists of the Washington University in Saint Louis, based on their large experience in this field.

The criteria defining adequate clinical and physiologic parameters for lung donation have remained substantially unchanged since their determination in the 1980s. These criteria have been herein examined by individual factors evaluating their effects on outcomes. Such analysis, performed by the colleagues of the Universities of Louisville and of Philadelphia, could be of practical utility, especially because, at present many centres advocate the use of extended criteria donors with the aim of increasing the donor pool with similar transplant outcome.

A comprehensive overview of indications and outcomes for both adult and pediatric lung transplantation has been provided in this book by the group of the Ohio State University.

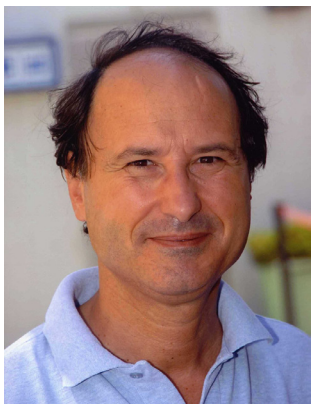
Discussion of technical aspects, with special interest for bilateral sequential lung transplantation and airway anastomosis including management of related complications, have been assigned to two of the groups with the largest experience in the field, those of the Pittsburgh University and of the University of Rome, respectively.

Historically, the use of extracorporeal circulatory support such as ECMO has been found related to poor outcome and therefore considered contraindicated in lung transplantation. However, more recently, many centres are trying to optimize their ECMO strategies as a means of bridging acute high-risk patients for lung transplantation. This topic has been thoroughly exposed by the colleagues of the Duke University who have also provided, in this book, an interesting up-to-date review of the practice and management strategies for lung transplantation based on their experience of over 1600 procedures.

The paucity of suitable donor lungs compared with the increasing number of patients who are candidates for lung transplant reflects in considerable waitlist mortality. Ex vivo lung perfusion has emerged as a new preservation technique whose application in high-risk donor lungs has proved successful in expanding the donor pool. An interesting review of technical details and of results of worldwide clinical experience with this technique is reported in this book by the colleagues of the University of Toronto.

Although lung transplantation is still strongly limited by insufficient donor organ availability, operative or bronchoscopic treatment options including Lung Volume Reduction Surgery, endobronchial valves, vapour or coils are offered only to a minority of patients with advanced Chronic Obstructive Pulmonary Disease (COPD). These techniques have appeared promising in early clinical trial, but further data are needed to better define their role in advanced COPD. The “state of the art” of these procedures has been exposed by the colleagues from the University of Queensland.

I am convinced that all the above mentioned contributions by outstanding authors will interest the readers and will provide a complete overview of a complex topic such as lung transplantation.



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