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Editorial

Superior Results From Robotic Distal Pancreatectomy Over Laparoscopic Technique: A Single Surgeon's Experience With 123 Consecutive Cases.

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In order to cure benign end-stage respiratory disorders, lung transplantation is now a practical reality. The most important elements of this challenging journey are undoubtedly the proper timing and selection of candidates, the assessment and management of possible donors, treatment, and post-transplant monitoring. Even though the general strategy has advanced significantly, there is still room for improvement, particularly in terms of mortality and survival rates. The most crucial element is the lack of full comprehension of the physiological processes that underlie the various stages of the donation-transplant process, ranging from the recipient's chronic rejection to the donor's lung injury. To have an increasingly positive effect on survival, basic and clinical research must work closely together.We want to present some of the most pertinent articles to readers.In order to enhance therapeutic results and get a deeper comprehension of the intricate molecular and cellular mechanisms underlying lung transplantation, animal models are essential. TheAsimacopoulos developed the transplanted rat model over 50 years ago, and it is a complicated process from the perspective of surgical technique and perioperative treatment [1].Mizuta et al.'s 1989 invention of the cuff technique made pulmonary artery and vein anastomoses much easier [2], but the transplantation model in tiny animals is still highly difficult and can only be carried out in a limited number ofcenters. The technical facets of small animal transplantation and the control of perioperative problems were thoroughly reviewed by Dr. Jin. For readers interested in experimental surgery, the authors offered a helpful guide that covered recent experimental results in small animal lung transplant models and assisted in determining which species would be best suited for a particular experiment [3].

For screening lungs from a high-risk donor pool, the ex vivo lung perfusion (EVLP) technique, which was originally applied in a clinical context almost 20 years ago, has shown a good safety profile [4]. EVLP screening is currently performed in the US prior to 5–10% ofeach and every lung transplant [5]. The potential for EVLP preconditioning of lung transplants to improve post-transplant outcomes has been hotly debated over the last 20 years. In terms of time to chronic lung allograft dysfunction (CLAD), there were no appreciable differences between the two groups in a retrospective analysis conducted by the Toronto group on a sizable cohort of patients (706 patients in the non-EVLP group and 230 patients in the EVLP group).

While respiratory performance and the generation of de novo donor-specific antibodies were comparable across the two groups, the EVLP group experienced fewer patients with primary graft dysfunction (PGD) grades 2 and 3 after 72 hours than the non-EVLP group [6].Numerous preclinical studies assess EVLP's potential positive impact on post-transplant outcomes, including its capacity to lessen cellular rejection. Three incredibly knowledgeable groups from the Universities of Zurich, Palermo, and Lund each address this subject. channel opener during EVLP can lessen edema and enhance lung physiological and metabolic parameters [7]. The same group also published an intriguing study that examined the impact of perfluorocarbon-based oxygen carriers and subnormothermic temperature.throughout EVLP. When compared to the normothermic group, there was a noticeable

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improvement in lung donor physiology and a decrease in inflammatory markers [8].

With an emphasis on cell therapies, cell product treatments, and cytokine filtering, two reviews by Drs. Miceli and Niroomand give a summary of experimental, preclinical, and clinical research that supports the use of EVLP as a therapeutic tool [9, 10].Compared to other solid organ transplants, the outcome following lung transplantation is still worse, mostly because primary graft dysfunction (PGD) affects both short-term and long-term survival. It is commonly known that the development of alloimmunity following lung transplantation is correlated with PGD-associated inflammation, which accelerates the onset of CLAD [11].

An updated review from the Leuven group evaluates the PGD issue; clinical, physiological, radiographic, and histological features are examined because a deeper comprehension of acute lung failure following LTx can yield new insights for potential treatments in the future [12]. Survival can be impacted by early detection of chronic organ disease by predicting therapy, which presently relies on photopheresis and antifibrotic medications.

Dr. Ram and associates evaluated the relationships between biological markers, including neutrophil and collagen I levels, and parametric response mapping (PRM), a computed tomography technique, in patients with restrictive allograft syndrome (RAS) and bronchiolitis obliterans syndrome (BOS), the two subtypes of chronic rejection [13]. By addressing the more difficult and contemporary issues in the lung transplant context, this Special Issue hopes to foster lively discussion between academics and clinicians and offer the resources needed to combine their experiences.

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