Introduction to the 59th Annual Thomas L. Petty Aspen Lung Conference. Lung Transplantation: Opportunities for Repair and Regeneration

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Lung transplantation has become a widely applied therapeutic option for patients with end-stage pulmonary parenchymal and vascular disease. Despite almost three decades of surgical and immunosuppressive improvements, long-term outcomes after lung transplantation lag behind those of other solid organ transplants. This may be due, in part, to the fact that the lung allograft, or, more specifically, the lung airways, are exposed to the environment and a variety of stimuli or pathogens leading to immune activation.

The life cycle of a lung transplant spans donation, explantation, preservation, implantation, and, finally, accommodation. Through each of these stages, innate and adaptive responses involving inflammation and fibrosis can harm the life-saving graft. Emerging insights into these events create the potential for new interventions that promote organ health and patient survival. With an emphasis on integration of basic, translational, and clinical approaches, the theme of the 59th Annual Thomas L. Petty Aspen Lung Conference was “Lung Transplantation: Opportunities for Repair and Regeneration.” The conference focused on the central question for each of these stages: *how can knowledge of the mechanisms underlying allograft injury, airway inflammation, and remodeling be translated into effective approaches to improve long-term allograft survival?*

To address these fundamental issues, we organized the program into a series of thematic sessions focusing on each stage of the lifecycle of a lung transplant. Each session was

Figure 1. The 59th meeting of the Thomas L. Petty Aspen Lung Conference. *Left to right:* Tereza Martinu, M.D., Co-Chair; Martin R. Zamora, M.D., Chair; Sonja Schrepfer, M.D., Ph.D., Conference Summarizer; and Mark R. Nicolls, M.D., Co-Chair.

anchored by State of the Art presentations from thought leaders in each respective area, with ample time dedicated to scientific debate. We intertwined experts in the field of lung transplantation with experts in immunology, inflammation, and remodeling from outside the lung transplant community. These presentations were complemented by shorter talks and poster sessions, maximizing the opportunity for investigators at all career levels to participate in the conference. Our goal was to encourage collaboration across diverse

scientific disciplines, with new investigative approaches brought to bear on the field of lung transplantation. The diverse themes were reconciled in a concluding Conference Summary. *Our overall objective* was to assemble thought leaders in transplantation to educate the next generation of scientists and define the next big steps to be taken in the field. ■

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