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Lung Transplant program in Asia

Govini Balasubramani
Program Director Heart and Lung Transplant, Fortis Hospital, India

The evolution of lung transplant medicine has been accomplished with innovative translational research on end-stage lung diseases and contribution from forerunners all over the world.

The Asian Society of Transplantation (AST) was fully established in 1989 with the initiation of Asian transplant registry. Data was compiled from all the countries who were registered. The largest set of lung transplant data was from Thailand between the year of 1993 and 1995. The annual number of lung transplants in Asia increased from 3 (1994) to 14 (1997). By 1999, Japan started living donor lung transplantation with 14 cases reported in 2003 and until today, most of the reports on living-donor lobar lung transplantation have been from Japan. While there was a fluctuation of annual heart transplants, there was a relatively stable increasing trend of lung transplantation. Between 1998 and 2002, the collected number of lung transplants had reached 106, mostly from Japan, Thailand, Taiwan region and Hong Kong region.

Having overcome the learning curve for the surgical techniques, lung transplantation doctors may confront much more challenges than those in other organ transplantation in the peri-transplantation period. Particularly with the practices in Asia, bottlenecks constrain the further expansion of service with difficulties in covering a large area with high demand and an uneven distribution of qualified centers. For obtaining and preserving suitable donor lungs, a candidate donor lung from the donor on mechanical ventilation for days or even weeks and the need to spend days to receive consent from brain-death donors' family have always been especially challenging situations. Many donated lungs have been found to be colonized with microbes and culture positive upon evaluation. The vulnerable lungs were even required to travel thousands of kilometers to where the recipients were located. Improper donated lung maintenance with pulmonary edema and multidrug-resistance bacterial infection interfered with the effective usage of grafts. A uniform standard of work-flow and comprehensible training are the key factors to maintain the quality of organ procurement.

Many recipients are reluctant to be evaluated or worrying about unbearable cost without reimbursement. Many elderly patients, who have good family support from many children, can afford the cost and match the criteria, are willing to be listed and transplanted. However, in younger patients, if they lack support, they may be hesitant at first and decide to do the transplant late in time. These candidates in the waiting list are always depending on ventilator or mechanical circulation support with more comorbidities.

Lung transplantation in Asia has struggled like other places in the world, and found its way through the resolution and determination of its practitioners. The Last one decade marked a milestone for Asia organ transplantation, and since then, all the participants, including surgeons, physicians, scientists, and coordinators, have taken the opportunity to refine and amplify the accomplishments of the predecessors throughout the world.

To promote the development of lung transplantation, not only will surgical treatment techniques determine the survival and life quality, but public awareness and acceptance of this treatment will also be crucial for long-term growth.

Currently in Asia, the social media plays mass media propaganda, exchanging and sharing of information among friends and acquaintances. The transplant teams have established their own webpages with articles to explain lung transplantation and organ donation, share information and introduce their centers. Patient groups have also been established, with support from government or specific foundations for diseases, such as those for pulmonary artery hypertension, LAM, and pneumoconiosis. In these patient group, patients (post-lung transplantation, or on the waiting list, or on evaluation, with their families), treating doctors, researchers (from institutions or the industry), and even lawyers or journalists work together to boost their knowledge while drawing more attention from people, both domestically and abroad.

In Asia, the development in the following areas is urgently needed and of strategic importance for further research in lung transplantation medicine. It is not uncommon that lung transplantation doctors to be excited about ex vivo lung perfusion's (EVLP), Transmedics innovative concept and design for use. More biomarkers for early diagnosis of acute and chronic rejection as well as precise detection of infection using next generation of sequencing are also indispensable parts of our future research.