



Lung transplant for COVID-19—a bone of contention!

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As a follow-up to Part 1 of the thematic issue on lung transplantation (LT), it is indeed our pleasure to present to you Part 2 of the same. Whereas in Part 1 we focused on the surgical aspects and donor-related topics like pre-operative donor management, bridging extracorporeal membrane oxygenation (ECMO), procurement of the lungs, anaesthesia, and surgical technical details, including intra-operative decision-making, this issue is focused on post-operative management and issues related to the medical aspects of the transplantation and recipient selection.

Picking up the threads from the Editorial of Part 1, as also the fact that the issue is topical and contemporary, LT for the indication of acute respiratory distress syndrome (ARDS) of coronavirus disease 19 (COVID-19) [1] has indeed become a bone of contention. The philosophical debate of ‘Utilitarianism’ versus ‘Distributive’ Justice, which I alluded to in my earlier editorial [2], finds its greatest applicability in the use of LT for COVID-19. A lot of centres have taken up these patients for transplantation and the results have been quite satisfactory, despite technical challenges from hilar lymphadenopathy [2], severe pleural adhesions, and tendency to bleed, requiring increased blood transfusion [3, 4]. However, the point of contention is that when ARDS due to other causes like H1N1 has not yet been universally considered for LT, why should COVID-19 enjoy a ‘Celebrity Status’, that it jumps the queue and comes to the top of the wait-list? As is true for any controversy, the proponents and the opponents here too are having a field day. Proponents take refuge in sheer numbers of COVID-19 patients as a suitable justification for considering them for LT on priority. Sceptics [5] respond with the plea that there is already a huge wait-list of non-COVID patients waiting patiently for their turn and it is unethical for COVID-19 patients to jump the queue and dislodge the patients legitimately on the waiting list. Moreover, they contend; there is the uncertainty of long-term results of

LT in COVID-19 patients. A countervailing retort from the advocates—whatever little evidence we have of mid-term one-year survival of LT for COVID-19, it is very satisfactory at 94% in a series of 60 patients [6], which is not much different from non-COVID indications for LT. However, according to the data presented at the recent Annual Meeting of the American College of Chest Physicians (CHEST 2021), mortality rate in ECMO patients during the 2nd wave of the COVID-19 pandemic (Nov 2020–Mar 2021) was 69%, with sepsis occurring as a consequence of increased use of immuno-modulation therapy, as the commonest (32%) cause.

In their riposte to the former observation regarding the wait-list queue, the authors have even gone on to say that despite COVID-19 patients jumping the wait-list, the patients which were displaced did not suffer and there was no increase in the wait-list mortality [6]. Lepper et al.’s [5] proposal to allot the lung allocation score to zero for COVID-19 patients with ARDS does not find favour with Bharat et al.—‘Denying a life-saving treatment to this population would be a disservice and, in our view, unethical’ [6]. In fact, they suggest that the increased need for donor organs can be met through use of extended criteria donor lungs, hepatitis C donors, and ex vivo lung perfusion techniques [6]. However, this is just one report and the jury is still out.

Another contentious issue is the time period at which lung parenchyma should be deemed ‘unrecoverable’ [7]. In Bharat et al. series [3], LT was carried out at a median of 69 days (IQR (interquartile range) 51–82) after COVID-19 onset and 49 days (IQR 38–80) of ECMO support, at which time period they deemed lung injury irreversible. To the contrary, Schmidt et al. [8] from France reported 50% salvage, sans LT, in 12 patients on prolonged (> 50 days) ECMO support for COVID-19, thereby challenging the early cut-off presumed by Bharat et al. [3]. Anecdotal successful LT after 6 months of extended ECMO support for COVID-19-induced ARDS has been reported, though the patient died at 9 months due to consequences of acute rejection [9]. Whether delayed LT, after prolonged ECMO support, will compromise outcomes remains an unexplored issue.

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No matter the debate, LT is an important tool in the salvage armamentarium of a physician against COVID-associated ARDS. Its applicability obviously will vary according to the cultural and philosophical beliefs of the patients, society, and the medical profession. Availability of resources—human, infrastructural, and fiscal—besides support of the regulatory bodies, the government, and other non-governmental bodies would be integral to its success. Multidisciplinary peer support, both overt and covert abetment and encouragement of the institution, and the benefaction of its administrative hierarchy, are pre-requisites for the success of such resource-intensive endeavours, trying to change the paradigm of treatment of end-stage pulmonary dysfunction and drive the goal posts into ‘Devil’s (hicdeath’s) own territory.

Bravo you Transplant folks. This issue is dedicated to you all.

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Declarations

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