



# Letter to the editor: left heart decompression in patients on venoarterial extracorporeal membrane oxygenation

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We appreciate the valuable comments by van der Wal *et al.* (1). In our study, we showed the inferior outcome of the delayed or therapeutic left heart decompression (LHD) compared with prophylactic decompression (2). The pulmonary edema induced by venoarterial extracorporeal membrane oxygenation (VA ECMO) sustains a significant problem, even after proper LHD. Because the capillaries of lungs are exposed to rapidly rising pulmonary venous pressure, the plasma of the capillary blood initially leaks into the alveolar space and the flooded alveoli results in pulmonary edema. After various lengths of time, from several minutes to a few days, alveolar hypoxia can lead to destabilization of the intercellular junction, breakage of the barrier between capillaries and the alveoli, and impairment of alveolar fluid clearance (3). Additionally, it can cause bleeding into the airway, which is often misdiagnosed as coagulopathy-induced alveolar hemorrhage. The sequelae of severe left ventricular distension are bacteremia owing to destructed alveolar capillary membrane, hospital-acquired pneumonia, and acute respiratory distress. These complications become a significant contraindication for heart transplantation or left ventricular assist device. Therefore, the survival benefit of LHD suggested in recent studies is believed to be the result, in part, of prevention and treatment for serious problems associated with pulmonary edema (4,5). We humbly agree that there is an important bias in our study. However, we are both researchers and active clinicians on the battlefield of intensive care. We

advise not to lose the golden timing of LHD. The LHD procedure should be performed either prophylactically or at the early stage of left heart distension and pulmonary edema.

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