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Open Lung Approach in Acute Respiratory Distress Syndrome

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Editorial

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Abbreviations: ARDS: Acuten Respiratory Distress Syndrome; PEEP: Positive End-Expiratory Pressure; AECC: American-European Consensus Conference; ICU: Intensive Care Unit; OLA: Open Lung Approach

Editorial

Outcome of acuten respiratory distress syndrome (ARDS) is conclusively affected by the approach to ventilator support. Substantial controversy in the application of positive end-expiratory pressure (PEEP) and the use of lung recruitment still exists. Several randomized controlled trials revealed that patients meeting the American-European Consensus Conference (AECC) criteria for ARDS whose PaO_2/FiO_2 was more than 200 mmHg on standardized ventilator settings had an intensive care unit (ICU) mortality of around 12% to 23%, while those with a PaO_2/FiO_2 of 200 mmHg or below 200 mmHg on standardized ventilator settings have a mortality of 45% to 55%. It is not known how many of these patients had developed ARDS and if those without developed ARDS were harmed by high PEEP level regarding the lack of benefit from higher PEEP level in the LOV, Express, and ALVEOLI trials. According to the response to the ability of standardized ventilator settings in identification of patients with developed ARDS and in mortality prediction, thus, appropriate patient selection is a critical aspect of enrollment criteria. The most appropriate technique for setting PEEP is to recruit the lung and determine the least PEEP level that is necessary to maintain the lung open by a decremental PEEP trial, called "Open Lung Approach" (OLA). This temporal sequence theoretically insures ventilation on the deflation curve of the respiratory system's pressure-volume curve, decreases cyclic lung stress by avoiding derecruitment, and improves the lung mechanics.

In conclusion, OLA can improve driving pressure and oxygenation without detrimental effects on ventilator free days, barotrauma, or mortality in patients who developed ARDS.