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A Word of Caution Regarding Patient Self-inflicted Lung Injury and Prophylactic Intubation

To the Editor:

We read the Critical Care Perspective “Mechanical Ventilation to Minimize Progression of Lung Injury in Acute Respiratory Failure” by Brochard and colleagues with great interest (1). The concept of patient self-inflicted lung injury (P-SILI) is an intriguing idea. However, there are several important points worth considering when addressing this concept.

First, intubation, with sedation and neuromuscular blockade, is not without risk, particularly with regard to harm apart from lung injury. For example, neurocognitive and neuromuscular dysfunction are ubiquitous in intubated, mechanically ventilated intensive care unit survivors. Accordingly, even if P-SILI does occur, the cost of intubation, with sedation and paralysis, may be greater than maintaining spontaneous breathing without intubation. The intriguing early data regarding benefits on neuromuscular blockade as a strategy for acute respiratory distress syndrome management are currently under investigation in a large multicenter trial sponsored by the PETAL (Prevention and Early Treatment of Acute Lung Injury) Network.

The avoidance of intubation using high-flow nasal cannula oxygen, helmet noninvasive positive pressure ventilation (NIPPV), and face mask NIPPV have recently been demonstrated to improve outcomes in those with acute hypoxemic respiratory failure (2–4). Although higher tidal volumes during NIPPV predict the need for intubation (5), it is not clear whether this is cause/effect or merely an epiphenomenon.

Although there is evidence describing the potential harm associated with spontaneous breathing, there is also conflicting evidence suggesting that spontaneous breathing with varying tidal volumes is associated with a reduction in lung injury compared with monotonous controlled mechanical ventilation (6). Indeed, the

benefits of a varying respiratory volume and cadence (“noisy,” natural breathing) have been known for decades (7).

Although the ideas presented by Brochard and colleagues regarding mechanical ventilation to minimize lung injury are intriguing, we believe it is premature to recommend prophylactic intubation to prevent P-SILI. ■

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Hyperventilation (Not Ventilator)-induced Lung Injury

To the Editor:

We read with great interest the recent article by Brochard and colleagues (1) that presents excellent physiologic explanations for the hazardous effect of high tidal volume, even in spontaneously breathing patients. However, the authors introduced a new term (patient self-inflicted lung injury) to explain the same physiologic principle of acute lung injury (ALI) caused by large tidal volumes in mechanically ventilated patients.

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