

An Editorial Note on Acute Respiratory Distress Syndrome (ARDS) in Patients

Ben Salem*

Department of Respiratory Medicine, Hospital for Burns - Autonomous City of Buenos Aires, Argentina

Editorial

In intensive care units, Acute Respiratory Distress Syndrome (ARDS) receives a lot of attention. Despite the fact that the pathophysiology of this illness is well understood, the focus in intensive care units is primarily on life-sustaining treatment and avoiding the adverse consequences of invasive interventions. Despite major breakthroughs in mechanical ventilation over the last 20 years, which have had a significant influence on mortality, the incidence remains high. Patients with acute respiratory distress syndrome, particularly those with the most severe instances, frequently have refractory hypoxemia as a result of shunt, necessitating additional treatments beyond mechanical ventilation, including mechanical ventilation in the prone position. This strategy, which was first suggested in 1974 to increase oxygenation, is simple to adopt in any intensive care unit with qualified workers.

The bibliographic evidence for the prone position is extremely strong. Several randomised clinical trials have shown that prone decubitus improves oxygenation in patients with acute respiratory distress syndrome as evaluated by the PaO₂/FiO₂ ratio, as well as enhancing patient survival. The members of the Sociedad Argentina de Terapia Intensiva's Respiratory Therapists Committee conducted a narrative review with the goal of discovering the available evidence related to the implementation of prone position, changes in the respiratory system caused by this manoeuvre, and its impact on mortality. Finally, decision-making guidelines are offered. The acute respiratory distress syndrome (ARDS) has been recognised as a serious clinical concern in respiratory medicine from its first description. ARDS produced about 300 indexed articles between July 2015 and July 2016. As an arbitrary overview of clinical importance, this review summarises only eight of them: definition and epidemiology, risk factors, prevention, and treatment. Although precise application of definition criteria is essential, the many resource-setting situations encourage spatial diversity and disparate outcome data.

ARDS is underdiagnosed, according to a major worldwide multicentre prospective cohort study including 50 nations on five continents, and there is room for improvement in its care. In addition, epidemiological data from low-income countries suggests that the present definition of ARDS needs to be

revised in order to enhance its detection and global clinical outcome. High ozone levels and low vitamin D plasma concentrations were discovered to be predisposing situations for ARDS, in addition to the well-known risk factors. Since two recent trials on aspirin and statins failed to lower the incidence in at-risk patients, drug-based preventative treatments remain a big problem. A new disease-modifying drug is awaited: while some recent trials suggested that ARDS patients will have a better prognosis, death and debilitating sequelae remain high among ARDS survivors in intensive care. Prone positioning has been more popular in the treatment of patients with acute respiratory distress syndrome (ARDS) in recent years, and it is currently seen as a straightforward and safe way to increase oxygenation. However, the physiological mechanisms that cause improved respiratory function as well as the true therapeutic effect are still unknown.

The purpose of this review is to talk about the physiological and clinical implications of prone positioning in ARDS patients. The main physiological goals of prone positioning are:

- 1) To improve oxygenation
- 2) To improve breathing mechanics
- 3) To homogenise the pleural pressure gradient, alveolar inflation, and ventilation allocation
- 4) To increase lung volume and decrease atelectasis regions
- 5) To facilitate secretion drainage
- 6) To reduce breathing machine lung injury.

Oxygenation improves in roughly 70-80% of patients with early acute respiratory distress. The positive effects of oxygen saturation decrease after 1 week of mechanical ventilation. The aetiology of acute respiratory distress syndrome may significantly affect the reaction to prone positioning and extreme caution is required when the manoeuvre is conducted. Pressure sores are common and are connected to the amount of pronations. The supports used to prone and during placement varied from centre to centre and are not standardised and despite prone placement, intensive care unit and hospital stay and death remain high.

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***Address for Correspondence:** Ben Salem, Department of Respiratory Medicine, Hospital for Burns - Autonomous City of Buenos Aires, Argentina, E-mail: Ben.salem@gmail.com

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