



A prospective international observational prevalence study on prone positioning of ARDS patients: the APRONET (ARDS Prone Position Network) study

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INTRODUCTION: While prone positioning (PP) has been shown to improve patient survival in moderate to severe acute respiratory distress syndrome (ARDS) patients, the rate of application of PP in clinical practice still appears low.

AIM: This study aimed to determine the prevalence of use of PP in ARDS patients (primary endpoint), the physiological effects of PP, and the reasons for not using it (secondary endpoints).

METHODS: The APRONET study was a prospective international 1-day prevalence study performed four times in April, July, and October 2016 and January 2017. On each study day, investigators in each ICU had to screen every patient. For patients with ARDS, use of PP, gas exchange, ventilator settings and plateau pressure (Pplat) were recorded before and at the end of the PP session. Complications of PP and reasons for not using PP were also documented. Values are presented as median (1st-3rd quartiles).

RESULTS: Over the study period, 6723 patients were screened in 141 ICUs from 20 countries (77% of the ICUs were European), of whom 735 had ARDS and were analyzed. Overall 101 ARDS patients had at least one session of PP (13.7%), with no differences among the 4 study days. The rate of PP use was 5.9% (11/187), 10.3% (41/399) and 32.9% (49/149) in mild, moderate and severe ARDS, respectively (P = 0.0001). The duration of the first PP session was 18 (16-23) hours. Measured with the patient in the supine position before and at the end of the first PP session, PaO₂/F_O increased from 101 (76-136) to 171 (118-220) mmHg (P = 0.0001) driving pressure decreased from 14 [11-17] to 13 [10-16] cmH₂O (P = 0.001), and Pplat decreased from 26 [23-29] to 25 [23-28] cmH₂O (P = 0.04). The most prevalent reason for not using PP (64.3%) was that hypoxemia was not considered sufficiently severe. Complications were reported in 12 patients (11.9%) in whom PP was used (pressure sores in five, hypoxemia in two, endotracheal tube-related in two ocular in two, and a transient increase in intracranial pressure in one).

CONCLUSIONS: In conclusion, this prospective international prevalence study found that PP was used in 32.9% of patients with severe ARDS, and was associated with low complication rates, significant increase in oxygenation and a significant decrease in driving pressure.

Résumé en anglais

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