




8. Matava CT, Kovatsis PG, Summers JL, et al. Pediatric airway management in COVID-19 patients – consensus guidelines from the Society for Pediatric Anesthesia's Pediatric Difficult Intubation Collaborative and the Canadian Pediatric Anesthesia Society. *Anesth Analg*. 2020 [ahead of print].

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Prone positioning in management of COVID-19 hospitalized patients



Uso do decúbito ventral para o manejo de pacientes com COVID-19 hospitalizados em enfermaria

Dear Editor,

Since Zhe Xu, reported a 50 year-old man with confirmed COVID-19 and pathologically Acute Respiratory Distress Syndrome (ARDS),¹ the other researchers such as Heymann et al. emphasizes occurrence of ARDS in these patients.² Many treatments and interventions have been suggested for this syndrome and some of them have been approved. We suggest prone positioning. Some benefits have been stated for this position including: improved ventilation-perfusion matching, recruitment of lung dependent regions, optimized chest wall mechanics, and enhanced drainage of tracheobronchial secretions.³ Besides these declared benefits, there were not any consistent results about the effects of this position in ARDS cases. So Beitler et al. worked on a meta-analysis of seven clinical trials and finally reported that Prone positioning significantly reduces mortality from ARDS in patients with low tidal volume.⁴

We applied prone position in 10 randomly selected patients, which had COVID-19 (70% male and 30% female) and were hospitalized in a non-ICU ward specific for COVID-19 patients. Tracheal intubation was not applied for any patients. None of them used mechanical ventilation. The mean age of patients was 41 years-old. 30% of them had

history of underlying diseases (hypertension or diabetes). We observed that mean SPO₂% was 85.6% and 95.9% before and after positioning, respectively, and administrating this position show remarkable change in SPO₂%. Also, the feeling of dyspnea decreased to 40% of cases and all patients were discharged from the hospital. Mean hospitalization duration for these patients was 4.8 days and no deaths occurred (Table 1). Written informed consent was obtained from all the participants.

While our results may not show statistically worth information, we clinically observed improvement in respiration status and SPO₂% of patients by applying prone positioning, so it seems that this position can help COVID-19 patients who suffer from a mild form of the disease and reduce mortality. But more precise and valid studies about this protective intervention are needed.

Author's contribution

All authors met the criteria for authorship contribution based on recommendations of the International Committee of Medical Journal Editors.

Conflicts of interest

The authors declare no conflicts of interest.

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Table 1 Information of patients hospitalized with COVID-19.

Case	Sex & Age	Tobacco Smoker?	Underlying disease?	Tracheal Intubation	Dyspnea before positioning	Respiratory rate before positioning	SPO ₂ % before positioning	Use of auxiliary breathing muscles before positioning	Dyspnea after positioning	Respiratory rate after positioning	SPO ₂ % after positioning	Use of auxiliary breathing muscles after positioning	Time of hospitalization (days)
1	M/31	No	No	No	Yes	22	85	No	No	22	97	No	3
2	M/30	No	No	No	Yes	22	86	No	Yes	22	99	No	4
3	M/41	No	H	No	Yes	21	85	No	No	22	93	Yes	4
4	M/34	No	D	No	Yes	21	86	Yes	Yes	22	97	No	4
5	M/34	No	No	No	Yes	19	87	No	No	20	95	No	3
6	M/53	No	No	No	Yes	18	85	Yes	Yes	24	98	No	5
7	M/56	No	No	No	Yes	22	85	No	No	21	94	No	6
8	F/38	No	No	No	Yes	20	86	Yes	Yes	24	93	No	7
9	F/45	No	No	No	Yes	18	86	No	No	21	98	No	7
10	F/48	No	H	No	Yes	27	85	No	No	26	95	Yes	5

M, Male; F, Female; H, Hypertension; D, Diabetes.

References

1. Xu Z, Shi L, Wang Y, et al. Pathological findings of COVID-19 associated with acute respiratory distress syndrome. *Lancet Respir Med.* 2020;8:420–2.
2. Heymann DL, Shindo N. COVID-19: what is next for public health? *Lancet.* 2020;395, [http://dx.doi.org/10.1016/S0140-6736\(20\)30374-3](http://dx.doi.org/10.1016/S0140-6736(20)30374-3).
3. Guérin C. Prone position. *Acute respiratory distress syndrome.* Springer International Publishing; 2017. p. 73–83.
4. Beitler JR, Shaefi S, Montesi SB, et al. Prone positioning reduces mortality from acute respiratory distress syndrome in the low tidal volume era: a meta-analysis. *Intensive Care Med.* 2014;40:332–41.

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