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## Prone positioning in management of COVID-19 hospitalized patients

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**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 SPO<sub>2</sub>% was 85.6% and 95.9%

before and after positioning, respectively, and administrating this position show remarkable change in SPO<sub>2</sub>%. 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 SPO<sub>2</sub>% 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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### References

**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 <sub>2</sub> % before positioning	Use of auxiliary breathing muscles before positioning	Dyspnea after positioning	Respiratory rate after positioning	SPO <sub>2</sub> after positioning
1	M/31	No	No	No	Yes	22	85	No	No	22	97
2	M/30	No	No	No	Yes	22	86	No	Yes	22	99
3	M/41	No	H	No	Yes	21	85	No	No	22	93
4	M/34	No	D	No	Yes	21	86	Yes	Yes	22	97
5	M/34	No	No	No	Yes	19	87	No	No	20	95

6	M/ 53	No	No	No	Yes	18	85	Yes	Yes	24	98
7	M/ 56	No	No	No	Yes	22	85	No	No	21	94
8	F/ 38	No	No	No	Yes	20	86	Yes	Yes	24	93
9	F/ 45	No	No	No	Yes	18	86	No	No	21	98
10	F/ 48	No	H	No	Yes	27	85	No	No	26	95

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