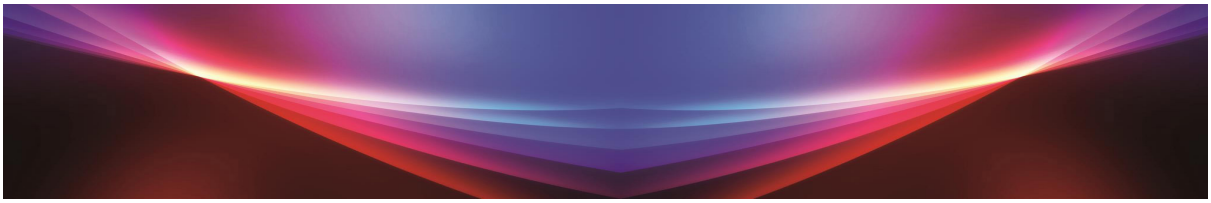

SUPPLEMENTARY MATERIAL

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Effectiveness of early awake self proning strategy in non-intubated patients o with moderate COVID-19 hypoxemia: An open-labelled randomized clinical trial from Jodhpur, India

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1A. Awake prone procedure

Awake prone positioning was conducted in the high dependency (HDUs) and intensive care (ICU) settings at a tertiary care hospital at Jodhpur, India. The doctor-patient ratio was 1:6 (for those on non- rebreather) while it was 1:15 to 1:25 in the HDUs where patients on nasal prongs and face masks were managed. The nurse patient ratio was 1:2 ICUs and 1:6 in the high dependency units. Ninety percent of included patients were managed in the HDUs. A prone team was established, and residents, other doctors and nursing staff were trained by the investigators. The training session comprised of understanding prone positioning, care and supervision of patients during proning and details of monitoring and data collection. The training sessions were held repeatedly at regular intervals (usually monthly) by three of the investigators who were involved in the clinical care of patients.

Awake proning (for those randomized to prone group) was performed as per the cycle recommended by Indian national guidelines (Fig S1 and S2). The cycle began with prone position being maintained for at least 30 minutes and up to 2 hours. Pillows and cushions were provided for comfort. This was followed by left lateral position for 30 minutes, right lateral for 30 minutes and supine or sitting position for 30 minutes. The total awake cycle duration was aimed to be 4 hours including short breaks, if any (Fig S1). The cycle was usually commenced one hour after meals, while allowing 5–10-minute breaks as required during any position for other activities.

Next cycle was started after a break of 45 to 60 minutes and a 3-4 cycles per day were attempted in all patients. All patients were aimed for at least 6-8 hours of proning per day while awake and encouraged to sleep prone if comfortable. Supplemental oxygen by nasal prongs or face mask was continued and was adjusted to maintain a target oxygen saturation of 94% by pulse oximetry (SpO2).

Patients were explained and trained in the proning procedure by a member of the prone team and given information sheets regarding prone positioning techniques. Mobile use and listening to music were encouraged during prone hours to address monotony which most awake patients experience during proning. One trained prone team member (nursing staff) was designated per prone cycle per patient for monitoring and ensuring oxygenation, correct positioning, and encouraging the patient's efforts to maintain the position for planned time. Patients in the control group were not asked to maintain any specific posture.

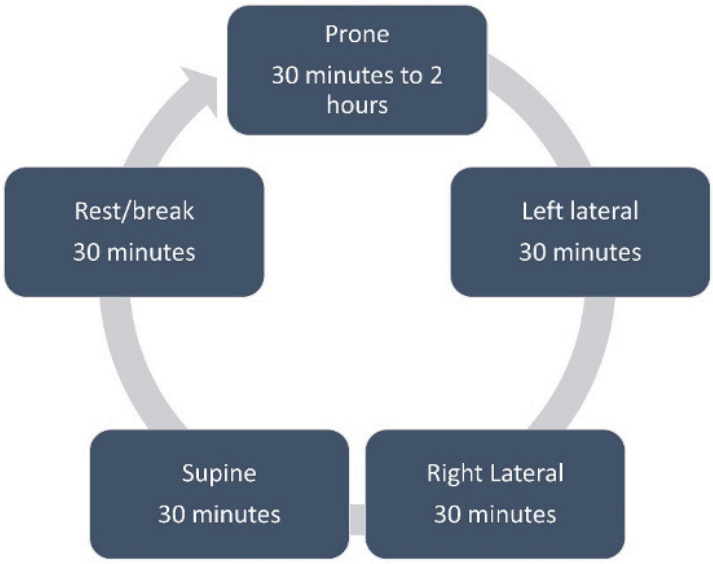
Supplementary Table 1. Data collection and monitoring proforma used in intervention group.

Name/Age											
AIIMS ID/WARD											
	Baseline (0 min)	10 min of prone	30 min	2 hours	LLP (0 min)	LLP (10 min)	RLP (0 min)	RLP (10 min)	Supine (0 min)	Supine (10 min)	Supine (30 min)
Pulse rate											
Saturation											
RR											
BP		NA	NA	NA	NA	NA	NA	NA	NA	NA	
Comments:											
Signature:											

Tolerance to prone (and other) positioning was monitored by measuring heart rate, blood pressure and respiratory rate using standard monitors at 10 minutes, 30 minutes, 2 hours and end of the cycle. Oxygen saturation was monitored continuously using a finger probe pulse oximeter. The position was terminated if oxygen saturation dropped below 90% despite adjusting the oxygen flow to more than 6 L/minutes from baseline requirement (as 2L/min every 5 minutes). Worsening dyspnoea (as assessed by the clinician); signs of respiratory-muscle fatigue, respiratory rate > 24/minute for more than 10 minutes, hemodynamic instability (systolic pressure <90 mm Hg, mean blood pressure <65 mm Hg) or persistent patient discomfort despite maximal encouragement were also indications for abandoning the position to move to the next position in the cycle (e.g., from left lateral to right lateral). Table S1 below shows the data collection sheet used to monitor prone positioning tolerance by team members.

Criteria for intubation/step-up included

Persisting or worsening respiratory failure, which included at least 2 of the following: worsening or unbearable dyspnea; lack of improvement in oxygenation and/or SpO2 below 90%; signs of respiratory-muscle fatigue; respiratory acidosis with a pH level below 7.30 were considered for intubation.



Supplementary Figure 1. Schematic diagram of awake prone cycle used in intervention group.

Supplementary Figure 2. Patient photographs showing prone cycle. A and D: Prone position, B: Left lateral and C: Right lateral positions (Informed consent obtained).

Supplementary Figure 2. Improvement of SpO2/FiO2 ratio in prone-phase as compared to supine phase for each patient (n=20) in the proof-of-concept trial.