

Use Supplemental Oxygen Rationally for the Treatment of COVID-19 Patients

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Oxygen as a life-saving drug was never used in such a large volume for treating the patients before COVID-19 pandemic; many COVID-19 patients require large volume of supplemental oxygen. Around 14% of all patients infected with Covid-19 develop hypoxemia/hypoxia, 5% develop critical disease needing intensive care and some may require invasive mechanical ventilation [1,2]. Till date no antiviral drugs has been shown to be effective for the treatment of COVID-19 patients; the treatment is symptomatic and supportive. Supplemental oxygen therapy is considered as life-saving supportive therapy in hypoxemic COVID-19 patients [3]. World Health Organization (WHO) has recommended oxygen therapy for the patients having respiratory distress, hypoxemia, or shock, with a target oxygen saturation (SpO_2) > 94% in non-COPD adult patients [4].

Hypoxic injury is one of the hallmark of COVID-19 pathology. Symptoms of hypoxia can easily be identified by patients themselves [5]. But one must recognize the fact of "Silent Hypoxemia" or "Happy Hypoxemia". Quite sufficient number of COVID-19 patients may have marked hypoxemia disproportion to the signs of respiratory distress. Health care professionals must understand and be vigilant about this typical clinical presentation of COVID-19 patients [2].

Health care professionals do not focus only on the patient's comfort at outset but carefully watch respiratory rate, other signs of respiratory distress and oxygen saturation with pulse oximeter as to initiate the oxygen therapy at appropriate time as early as possible. But pulse oximetry value must be inferred with caution, because left-sided shifting of the oxyhemoglobin dissociation curve. In hospital settings, arterial blood gas (ABG) analysis must be done at regular interval. One must keep this fact also in mind that abrupt and quick respiratory decompensation may happen in COVID-19 patients. Hence, health care professionals must also watch the tachypnea and hyperpnoea. In COVID-19 patients, these signs are most key clinical warning signs of impending respiratory failure help in starting oxygen therapy [2].

In COVID-19, lung tissues become inflamed and thickened. Well-timed oxygen therapy permits more oxygen to pass through inflamed and thickened lung tissue into blood and essentially treat hypoxemia [6]. Early initiation of oxygen therapy in patients with COVID-19 having hypoxemia may decrease mortality [4].

After initiation of supplemental oxygen therapy in adult COVID-19 patient, it should be monitored properly, titrated to target saturation of 92 - 94% (88 - 92% in COPD patients) and escalated or deescalated using delivery options in sequence: 1) Nasal cannula, 2) Venturi mask, 3) Face mask and 4) Non-rebreathe mask. Use of high flow oxygen, non-invasive ventilation and invasive ventilation if indicated must not be delayed [7].

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