Letter to the Editor

Home Based Ventilator Support during Covid-19 Pandemic: A Double-Edged Sword

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Dear Editor

Data from SARS outbreak due to corona virus 1 has shown that high viral load during transmission was associated with poor clinical outcome (1). Zou et al has reported comparable viral load in throat and nasopharyngeal swab of symptomatic and asymptomatic covid-19 patients suggesting noninvasive ventilation (NIV) induced aerosolization of secretion from asymptomatic patients will pose similar risk of viral transmission to household contact of the Covid-19 patients.(2). WHO has listed noninvasive ventilation including CPAP therapy as highly aerosol generative intervention putting healthcare workers and caregiver of patient at risk of contracting the disease (3).

Recent guidelines regarding home based ventilatory support has tried to balance the risk associated with stopping the support against risk of transmission to family members and caretakers (4, 5) we need to discuss this issue broadly in context of covid19 outbreak.

NIV: Currently the home based NIV is being used by those patients who are at risk of developing hypercapnic respiratory failure like COPD, morbid obese or having anatomical deformity of chest wall etc. as they don't need intensive monitoring or care in healthcare setting. Stopping NIV may lead to worsening of symptoms like dyspnea, lethargy, confusion, or development of life-threatening hypercapnia requiring hospital admission thus further increasing the chance of getting Covid-19 infection and over burdening the limited health infrastructure during pandemic. Most of the patients receiving home based NIV are bed ridden and it is easy to isolate them. Hence, there is a higher risk of transmission from caretaker to patient and once patient is infected then there is high risk of transmission to family members, caregivers and community. Hence if we are continuing home based care of positive patients then proper precaution like hand hygiene, using non vented mask with viral filters, isolating the patient in proper ventilated room and using personal protective equipment is necessary as well as our responsibility.

CPAP: Home based CPAP therapy is being used currently by obstructive sleep apnea (OSA) patients. CPAP therapy has improved quality of life as well as there is dramatic improvement in clinical condition of OSA patients. Stopping CPAP may lead to worsening of symptoms in patients with moderate to severe disease. Increased daytime sleepiness and lethargy

will affect patient performance in critical jobs. However, if CPAP user is infected then in order to prevent its transmission to family members, stopping CPAP for 2 weeks along with isolation of the patient will be sensible decision.

With limited data, we believe that risk of transmission of coronavirus during home based ventilatory support is very high and may have potentially lethal consequences. Thus for best interest of patients, care givers, family members and for community, we call for a consensus opinion that we should analyze the risk and benefit before giving blanket advise to withhold home based NIV and CPAP to all the patients that too during whole period of pandemic.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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