CCRC

OSLER COVID CLINICAL RESPONSE COMMITTEE

The use of non-invasive ventilation in long-term care settings during COVID-19 **8 May 2020**

The COVID Clinical Response Committee (CCRC) has been asked to provide guidance on non-invasive ventilation (NIV) (continuous positive airway pressure (CPAP) & bi-level positive airway pressure (BiPAP)) in long-term care settings during COVID-19.

In developing this complex guidance, multidisciplinary input was sought from the Department of Medicine Divisions of Respirology, Critical Care Medicine, and Infectious Diseases. The Department of Family Medicine and the Long Term Care Rapid Action Team as well as Infection Prevention and Control, Respiratory Therapy, and Ethics all provided perspective.

Recommended assessment of current NIV patients

1. Obstructive sleep apnea (OSA): We recommend discontinuation of NIV for OSA if this is the sole indication. To reduce nocturnal hypoxemia consider:
    a. positional therapy or elevation of the head of the bed
    b. limiting the use of sedating medications
    c. addressing nasal congestion
    d. low-flow oxygen via nasal cannula in patients with known severe nocturnal hypoxemia.

2. For patients on NIV for reasons other than routine OSA, a decision based on risk-benefit should be made with the MRP and patient's Respirologist/Sleep physician or Osler Respirologist-on-call. Examples of NIV where discontinuation may lead to clinical deterioration:
    a. where stopping treatment has previously resulted in hospital admission
    b. with concomitant advanced chronic lung diseases such as COPD and IPF
    c. hypoventilation from obesity hypoventilation syndrome or neuromuscular disease

3. For virtual consultation with Respirologist-on-call, if possible provide the following information:
    a. Patient demographics
    b. Past medical history, medications
    c. Previous Respirology/Sleep Medicine consultations and sleep study results.
    d. The case conference will be documented in the patient's chart.

Recommendations for current NIV patients

NIV Status	COVID Swab	Recommendation
Essential	+	• Review goals of care with patient/SDM • Consider discontinuation of NIV
Non-essential	+	• Stop
Essential	-	• Continue with appropriate precautions • Weekly COVID swab
Non-essential	-	• Stop

1. Based on available data the risk of viral dispersion due to the use of NIV is low, although the absolute risk is not known.
2. All NIV patients should be cared for in a single room.
3. COVID positive patients may be cohorted but NIV is not recommended.
4. All patients on NIV should undergo a weekly COVID-19 nasopharyngeal swab for surveillance.
5. Airborne/droplet/contact precautions and a closed-door are required during NIV use and for 3 hours following discontinuation regardless of COVID status. This includes an N95. This should include appropriate door signage.
6. Airborne infection isolation rooms or HEPA filters are not required as staff are protected primarily by PPE not the airflow in the room.
7. Minimize the number of people entering the room whenever the therapy is used.
8. If tolerated, humidification should be turned off and water not placed in the humidifier container.
9. Cleaning and disinfecting of equipment daily including the mask, headgear, tubing, humidifier and filter:
    a. Fill a sink with warm water and add a few drops of ammonia-free mild detergent and wash parts for about 5 minutes.
    b. Rinse and allow to air dry.
    c. Manufacturer recommendations for cleaning:
        i. *Philips Respironics Machines*
        ii. *Resmed Machines*

This guidance will be revisited as requested.

IMT Report Date - 11 May 2020

Ethical Principles

1. Changes to the treatment plans require consent where appropriate alternatives are offered to the resident or substitute decision-maker when the resident is not capable.
2. Information about Public Health measures/requirements or restrictions should be provided to the resident to promote informed decision-making.
3. Life-sustaining therapy cannot be discontinued without consent.
4. Advance care planning is not a substitute for consent. Treatment plans are proposed at the time they are indicated.

Clinical Rationale

1. NIV is considered an AGMP.
2. Expanded personal protection equipment (PPE) precautions including an N95 mask is recommended while a patient is on NIV to mitigate risk to staff caring for these patients.
3. For most patients, chronic NIV is part of a strategy to manage long-term cardio-respiratory risk and would not be expected to cause acute decompensation if discontinued (eg. CPAP for sleep apnea).
4. Some patients are more reliant on NIV and discontinuation is likely to result in decompensation and the possible need for a hospital transfer.
5. Based on available data the risk of viral dispersion due to the use of NIV is low, although the absolute risk is not known.

Reference Documents

The Ontario Ministry of Health COVID-19 Guidance for Long-Term Care Homes forms the initial basis for the guidance provided here. In addition, the guidelines of the following societies have been reviewed:

- American Academy of Sleep Medicine - Mitigation Strategies
- American Academy of Sleep Medicine - FAQs
- CHEST Patient Guidelines for Home Ventilation During COVID-19
- ATS Resource for Patients on Home CPAP
- Home PAP in COVID-19 Infected Patients, Journal of Clinical Sleep Medicine
- European Respiratory Review Article - Dispersion References