The outbreak of COVID-19 in China has impacted healthcare organizations around the world. Optiflow™ Nasal High Flow therapy is being utilized by affected hospitals to treat patients, and is being considered by others as they prepare for the potential further impact.

Summary

- Nasal High Flow has been used by clinicians as respiratory support for COVID-19 patients following the outbreak in China.3, 4, 5
- Nasal High Flow is recognized by the World Health Organization (WHO) for treatment of patients with COVID-19.
- The WHO says Nasal High Flow should be used with airborne precautions.1

How is COVID-19 being managed?

The WHO is issuing the following information on clinical management of patients and the status of the outbreak:

- Rolling updates on its COVID-19 web page2
- Interim guidance for Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected4

The WHO refers to usage of Nasal High Flow therapy for pre-oxygenation prior to intubation and for non-invasive respiratory support with close monitoring for clinical deterioration in selected patients with hypoxemic respiratory failure.1

Most of the clinical experience with COVID-19 patients currently comes from clinicians in China, South Korea and Italy. Although reports vary, they include the requirement for treatment of viral pneumonia and hypoxemia.

A retrospective observational study published by Yang et al.3 reported the clinical course and outcomes of critically ill patients with COVID-19 in Wuhan.

A recent publication4 in the Chinese Journal of Critical Care & Intensive Care Medicine from a group in Wuhan describes their treatment approach, which includes Nasal High Flow.

Another recent publication by Xie et al.5 in Intensive Care Medicine gives recommendations based on measures taken in China to deal with the shortfall of critical-care resources.
Changes in exhaled air dispersion*

The WHO outlines additional precautions that should be taken to protect healthcare workers during aerosol-generating procedures associated with an increased risk of transmission. These procedures include tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation and bronchoscopy.

Nasal High Flow is not specifically named by the WHO as an aerosol-generating procedure associated with an increased risk of transmission. However, there has been some uncertainty about the potential creation of aerosols from all forms of noninvasive respiratory support including Nasal High Flow.

According to the WHO: “Because of uncertainty around the potential for aerosolization, HFO, NIV, including bubble CPAP, should be used with airborne precautions until further evaluation of safety can be completed.”

Recent publications Hui et al., Leung et al. and Hui et al. compared the application of Nasal High Flow to a range of alternative therapies and interfaces and did not find increased risk of transmission via air dispersion. Collated air dispersion results from two studies conducted by Hui et al. are illustrated in the chart below.

Findings of a new study by Kotoda et al. suggest that "high-flow nasal therapy does not increase the risk of droplet and contact infection".

How to prepare for COVID-19

The WHO provides helpful information on COVID-19 preparation:

- Interim guidance for Clinical management of severe acute respiratory infection when novel coronavirus (2019-nCoV) infection is suspected.
- Interim guidance for Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected.

A recent publication in the Chinese Journal of Tuberculosis and Respiratory Medicine makes recommendations for prevention of the nosocomial transmission during respiratory care for critically ill patients infected by COVID-19.
Clinical Experience

The Handbook of COVID-19 Prevention and Treatment was compiled according to clinical experience with COVID-19 from The First Affiliated Hospital, Zhejiang University School of Medicine, in Hangzhou, the capital of China’s Zhejiang province.

For further information, please visit the F&P webpage: www.fphcare.com/COVID-19 or click on the hyperlinked reference below.