NEWSLETTER: ISSUE 6

F&P Optiflow™

Go with the flow

New evidence continues to emerge showing how Optiflow™ Nasal High Flow contributes to **improved patient care and outcomes**. To learn more about one of the world's fastest-growing respiratory therapies, be sure to visit www.myoptiflow.com today.

Optiflow™ is non-inferior to BPAP for cardiothoracic surgery patients with or at risk of respiratory failure.

STÉPHAN ET AL. 2015

The exciting results of the BiPOP study were recently published in the Journal of the American Medical Association.

Stéphan and colleagues sought to determine whether nasal high flow (NHF) is non-inferior to bi-level positive airway pressure (BPAP) for preventing or resolving acute respiratory failure (ARF) in patients post cardiothoracic surgery. They found that the Optiflow group showed:

- **A non-inferior rate of treatment failure**
- **A non-inferior rate of ICU mortality**
- **Less skin breakdown**

Furthermore, a lower nursing workload was noted.

Introduction

NIV is often used on patients with ARF post cardiothoracic surgery to improve oxygenation and avoid escalation, however it has a failure rate of approximately 20% and is known to be difficult and uncomfortable to implement.

Optiflow is increasingly being used in post-surgical environments, with heated and humidified gas at flow rates up to 60 L/min and oxygen fractions from 21% to 100% being delivered to patients through a nasal cannula.

Why this trial?

With postoperative ARF such a common indication for escalation, any therapy capable of maintaining extubation post surgery is of major clinical importance.

Stéphan et al hypothesized that Optiflow NHF was not inferior to NIV for the prevention or resolution of ARF, post cardiothoracic surgery.

Results

When treated with Optiflow, the outcomes were the same or better as those seen with BPAP. From 830 patients in six French ICU's:

- **No significant differences were seen for rates of treatment failure (NIV 21.9% vs NHF 21.0%)**
- **No significant differences were seen for ICU mortality, hospital mortality or adverse events.**
- **The proportion of patients with skin breakdown during the first 2 days was significantly higher in the BPAP group.**

How does this study help clinicians and their patients?

The findings of this study show that Optiflow can be considered as a default first-line therapy for patients post cardiothoracic surgery. Clinicians can have great confidence in the conclusions, which were attained using high-quality research methodology and published in a the high-impact JAMA journal (impact factor: 35.3).

▷ *To view the full paper, please visit: www.thevent.org/wp-content/uploads/2015/06/joi150052.pdf*

Optiflow™ improves survival rates in acute hypoxemic respiratory failure patients compared to standard oxygen therapy and NIV.

FRAT ET AL. 2015

An RCT with huge implications for critical care practice - the FLORALI study - was recently published in the renowned New England Journal of Medicine.

In 23 ICU's across France and Belgium, Frat and colleagues randomized 310 non-hypercapnic patients with acute hypoxemic respiratory failure (AHRF) to assess the efficacy of three oxygen delivery methods:

- **Standard oxygen therapy with face masks**
- **Bi-level positive airway pressure (BPAP)**
- **Optiflow™ nasal high flow (NHF)**

Use of Optiflow resulted in:

- **Reduced ICU and 90-day mortality rates**
- **Reduced intubation rates for more acute patients**
- **Increased ventilator-free days**
- **Reduced discomfort and dyspnea**

Background

Mechanical ventilation of patients with AHRF is associated with high mortality, however use of NIV has yielded conflicting data regarding prevention of escalation and improvement of outcomes.

Why this trial?

At the time of the study, the literature did not conclusively support the use of NIV in patients with non-hypercapnic AHRF; and the clinical efficacy of NHF had not yet been assessed on this population. Therefore, the researchers set out to determine whether NIV or NHF, compared with standard oxygen therapy, could reduce intubation rates and improve patient outcomes.

Results

Although the primary outcome of the study (proportion of patients intubated within 28 days) was not attained, a number of compelling results came from the secondary and post hoc analyses. The NHF group showed:

- **Significantly reduced ICU mortality** (NHF 11%, standard O_2 19%, NIV 25%)
- **Significantly reduced 90-day mortality** (NHF 12%, standard O_2 23%, NIV 28%)
- **Significantly reduced need for intubation in patients with a PaO_2:FiO_2 ratio < 200 mmHg** (NHF 35%, standard O_2 53%, NIV 58%)
- **Significantly increased ventilator-free days**
- **Significantly reduced intensity of respiratory discomfort and dyspnea**

How does this study help clinicians and their patients?

This well-designed study is the largest RCT to date to investigate the use of NHF compared to other oxygen delivery systems and was published in the New England Journal of Medicine, the highest-impact journal for general and internal medicine with an impact factor of 55.9.

The study seems to be encouraging a radical rethink in how to treat patients with AHRF hospital-wide. In an editorial in the NEJM, Michael Matthay, MD, wrote:

"Although additional trials are needed, [NHF] should be used for the treatment of patients without hypercapnia and with acute severe hypoxemic respiratory failure in the emergency department, the intensive care unit, and hospital settings in which appropriate monitoring is available."

Furthermore, Jean-Louis Vincent, MD, PhD, president of the World Federation of Societies of Intensive and Critical Care Medicine (WFSICCM), suggested in a Journal of Thoracic Disease editorial that:

"NHF is becoming the preferred option for the management of severe hypoxemic respiratory failure, and is superior to NIV in this condition."

▷ *To view the abstract for the study, please visit:* ***http://www.ncbi.nlm.nih.gov/pubmed/25981908***

▷ *To discover how to integrate Optiflow NHF into your clinical practice,* ***contact your local Fisher & Paykel Healthcare representative.***

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