

Ask The Experts

In the last issue of *Ventilator-Assisted Living*, Dr. John Bach's answer in the Ask the Experts column prompted this response from a reader: ***Dr. Bach stated that the BiPAP is "suboptimal" for resting lung muscles at night. As a BiPAP S/T user for 10 years due to PPS, please suggest the names of ventilator equipment which should be used for night rest of lung muscles.***

Dr. Bach responded: *For people who want to understand why BiPAP is suboptimal, that is, since you can not turn off the EPAP, and the IPAP is rarely set high enough to fully rest the inspiratory muscles, ventilators like the LTV series, Trilogy and Newport can be recommended. Any ventilator without EPAP is more appropriate.*

BiPAP would be OK at settings of IPAP 22 to 30 and EPAP minimum. But because of the EPAP, it is less comfortable this way, and it cannot be used for air stacking. This is discussed in my book, "Management of Patients with Neuromuscular Disease" available at www.doctorbach.com

Ventilator-Assisted Living asked the three recommended ventilator manufacturers to elaborate on what features of their product(s) address this issue.

Roxanne Venard, RRT, Manager, Clinical Services, Alternate Care, CareFusion,
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The LTV series ventilators can provide rest of the respiratory muscles, but the selection of a breathing mode, such as assist/control (A/C) or synchronized intermittent mandatory ventilation (SIMV), depends on the amount of support the patient requires to rest those muscles.

In the A/C mode, a breath rate and tidal volume or pressure are set to meet the patient's ventilatory requirements. (Tidal volume is the amount of air and/or oxygen that is delivered with each breath. A pressure breath is a specified amount of pressure that is delivered with each breath.) The ventilator guarantees a minimum number of machine-delivered volume- or pressure-controlled breaths. The patient may trigger additional assisted breaths of the same set volume or pressure.

If the SIMV mode is selected, the breath rate, a tidal volume or pressure, and pressure support are set. Pressure-support breaths are patient-triggered breaths for which the tidal volume is not set, and the breath ends by either a decrease in set percent of the breath peak flow or a specified time, whichever comes first. In SIMV mode, machine, assist and patient breaths may be given. For the first patient-triggered breath detected within a breath period, an assist breath is given. For all subsequent patient-triggered breaths within the same breath period, pressure support breaths are given. At the beginning of a breath period, if no triggered breaths were given in the previous breath period, a machine breath is given.

Cyndy Miller, RRT, Clinical Education Manager, Newport Medical Instruments, Inc.,
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The Newport HT70 and HT50 ventilators offer the clinical capabilities needed to provide partial or full inspiratory muscle rest for people who need to use assisted ventilation due to neuromuscular disorders including post-polio syndrome, ALS and muscular dystrophy.

At night, noninvasive HT70 users are ventilated through a mask using the A/C or SIMV modes, and either pressure-control or volume-control ventilation. The range of pressures and volumes available is high enough to ensure that the ventilator does the breathing work, and the

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user's muscles are allowed to rest and recover.

During the day, many HT70 noninvasive users prefer the flexibility of mouthpiece ventilation via the sip technique in which the user sips on a mouthpiece to initiate a breath, and then takes one or more breaths before letting go of the mouthpiece. Typically, the A/C mode with volume-control ventilation is selected so users can breath stack in order to expand and maintain lung volumes, and chest wall compliance.

Elaine Lesnak, Senior Marketing Manager, Philips Respironics, Elaine.Lesnak@philips.com

The Trilogy series of ventilators (Trilogy100, Trilogy200, Trilogy202) offers both pressure- and volume-controlled ventilation for either invasive or noninvasive use. The Trilogy, in an independent performance evaluation, was found to be the least

affected by leaks that can happen around trach tubes or nasal or face masks. The benefit to ventilator users is that the tidal volume that is selected is more consistently delivered during breaths, even in the presence of a leak. The evaluation also concluded that Trilogy consistently and accurately delivered the pressure that had been chosen, providing assurance that the user is being ventilated properly.

In the same evaluation, Trilogy required the lowest effort by the user to trigger a breath, thus offering a more sensitive delivery of breaths and possible decrease in the work of breathing. This improves the synchrony between the patient's breaths and those provided by the ventilator.

The Trilogy has a full range of modes, including A/C and SIMV, and with the appropriate choice, ventilator use is more comfortable. ▲



Barbara Rogers and Norma Braun, MD, at the CHEST 2010 Convocation in Vancouver, British Columbia, Canada, on October 31.

Barbara Rogers Awarded Pfrommer Memorial Lecture

Barbara Rogers, president of the National Emphysema/COPD Association, was awarded the 2010 Margaret Pfrommer Memorial Lecture in Long-Term Ventilation from the American College of Chest Physicians (ACCP).

The lecture, entitled "Behind Closed Doors: Confessions of a Ventilator User," featured Rogers' own case history as a vent user and partnerships with physicians regarding her health care. Preliminary data from her survey of ventilator users and video clips of ventilator users around the world were also presented.

Alan Goldberg, MD, and his wife Eveline Faure, MD, established the lecture in 1999 to encourage the "patient perspective" at ACCP meet-

ings to ensure that individuals who use mechanical ventilation can work more effectively as partners with their health care team.

"Margaret Pfrommer was a polio survivor and was assisted by mechanical ventilation for more than 45 years," said Goldberg. "She was our friend and teacher who made us listen and understand her situation."

The Margaret Pfrommer Memorial Fund is administered by the CHEST Foundation, the philanthropic arm of the ACCP whose mission is to provide resources to advance the prevention and treatment of diseases of the chest.

www.chestfoundation.org ▲