Newport HT50 Ventilator Offers a Young Patient Mobility

By Robin Dunnett, RRT, CPFT, RCP

A 9-year-old girl who is a long-term ventilator-dependent patient has a primary diagnosis of degenerative muscular ligament disease. With this type of condition, the body's musculature system degenerates, weakening to the point where patients develop a lack of strength in the ventilatory musculature and are unable to physically ventilate themselves, though their ability to oxygenate isn't necessarily compromised.

The unique issue faced when trying to ventilate this youngster wasn't the traditional problems, such as severe infection or a delicate hemodynamic situation. Instead, the concern was a lack of patient mobility due to the disease process itself.

From birth she had been effectively managed on a more traditional home ventilation setup consisting of a home ventilator, separate heater/humidifier with intermittent mandatory ventilation (IMV) setup, 50 pounds-per-square-inch (psi) compressor and a backup battery.

Because her condition was stable, the physician, nursing service and family wanted her to be as mainstreamed as possible and be able to attend public school and church services with a minimum of difficulty. Up to that point, however, she had been homebound approximately 90 percent of the time.

After looking at several options, we elected to use the Newport HT50. According to the manufacturer, the HT50 offers a variety of features that may not be found in other types of home ventilators:

- It contains internal IMV/SIMV, which eliminates the 50 psi compressor and the IMV setup.
- It doesn't require an external PEEP valve, which prevents the risk of PEEP changes due to the loss or breakage of the valve.
- The backup battery is internal and has a life of approximately 10 hours when fully charged. This feature adds to the convenience and mobility of the unit because no external backup battery is required.
- It's lightweight at about 16 pounds.

Steve Knight, CRTT, RCP, of John Stark and Associates provides training to Robin Dunnett, RRT, CPFT, RCP, on the Newport HT50 ventilator.

TRAINING AND USAGE

Because this was to be our maiden trial with this ventilator model, the entire respiratory staff went through some intensive training with a Newport representative. Our training consisted of several days of hands-on experiences with the unit and a comprehensive tutorial covering all of its aspects and functions. Once our training was complete, we in-serviced the nurses and the family on the ventilator's proper use.

After all of the caregivers had been trained to use the equipment, we placed the patient on the ventilator at her previous settings of SIMV, Rate 12, V_T 350, PEEP 5, t_I 0.8 seconds and F_{IO2} of 0.21. After a few minor alarm adjustments, the ventilator was running smoothly and the patient said that she was comfortable and feeling fine.

The patient was placed on the Newport HT50 in August 2001. Since then she has had no hospitalizations or significant problems with the ventilator use. With the freedom of smaller, less cumbersome equipment, she is now able to attend school and church with a minimum of difficulty. The family's reaction has been, understandably, enthusiastic. Her grandfather said, "This ventilator has saved our lives." ■

Dunnett is director of clinical services at American HomePatient, Houston.