

## IS TREATMENT COMPLIANCE IN THE HOME A DREAM OR REALITY? *Kenneth A. Wyka, MS, RRT, FAARC*



RTs working in home care will appreciate this scenario. A patient with an oxygen saturation of 87% refuses home oxygen upon discharge from the hospital. The reasons for this are legion and may include "oxygen is dangerous", "it is cumbersome" or more commonly, "I don't think I really need it." Then you have patients whose O2 sats are in the mid 90s but *want* home oxygen because they experience occasional dyspnea, feel more secure with it or believe they really need it. Matching patient's wants and needs is not always easy and is a home care dilemma that continues to be addressed by home care providers. Equally important is the issue of compliance with prescribed therapy in the home. It is safe to say that if patients want the therapy, they will probably use it and be compliant; if they don't want it, then compliance becomes an issue. Patient's wants and needs do come into play when one considers treatment compliance.

In the hospital setting, therapeutic compliance is easy to monitor and easy to respond to, but imagine what goes on in the home where an RT or other healthcare provider is not readily available.

Compliance with prescribed therapy is an essential component in the continuity of patient care. Let's review home oxygen, medicated aerosol and CPAP/bi-level positive airway pressure therapy. They represent the major treatment modalities provided for in the home and the need to monitor and address their compliance is important both therapeutically and economically. Naturally, insurance provides reimbursement for equipment expecting that it is being used as directed for a determined period of time. When

patients are not compliant, then, they hurt themselves and waste precious healthcare dollars. So what can be done to improve patient compliance? Is this a dream or is it a realistic possibility? One of the best ways to answer this question is through good patient education and an explanation for the need of the home therapy preferably by the prescribing physician. How many times have patients complained that they don't know *why* they are being put on home oxygen? This problem is not encountered as frequently with sleep patients or those on aerosol therapy but an occasional patient does slip through, not understanding the necessity or rationale for home therapy.

The second line of "defense" is the home respiratory therapist. How many patients have been saved because of the knowledge and the "selling ability" of a home care RT? Naturally, this task is easier if the physician had made some attempt at explaining the need for the oxygen, aerosol or CPAP. They often don't, however, thus having the RT assume the responsibility in the home is viable; however, home care visits by RTs are not reimbursed and home care companies are experiencing difficulty in staffing respiratory departments because of scarcity of personnel and continued cutbacks in reimbursement. Something has to give and hopefully, Congress will eventually pass legislation that will pay for respiratory home care visits.

Patients on home oxygen therapy who are not compliant usually state that they don't feel the need for it, or that they have issues with one of the following: expense of operating a concentrator, noise and heat from the concentrator, fear of the danger associated with oxygen or problems with their portable system (too heavy, too cumbersome or not enough time in the cylinder). Pulse oximetry performed on a routine basis will help establish the need for continued oxygen therapy. Patients who understand the underlying principles of oximetry actually look forward to having their oxygen levels monitored and of course home oxygen is not dangerous if used safely and as directed. Education is the key here. Some of the newer oxygen concentrators are more efficient electrically, are quieter and generate less heat.

Home care companies need to consider these types of systems, including the possibility of liquid oxygen. When it comes to portable cylinders, there are numerous oxygen conserving devices on the market and it simply takes a home care evaluation to determine which device is best for a particular patient, including the possible use of a portable oxygen concentrator by the patient. Regardless, oxygen compliance can be increased with patient education, follow-up and the use of the most appropriate system available.

Aerosol treatment non-compliance usually relates to long treatment times, ease of use and portability. The newer electronic nebulizers that use technology such as the electronic micro pump reduce treatment times significantly (down to 5 minutes in some cases), leave little residual medication, are quiet and light-weight and have portable options. Again, with good patient education and follow-up, newer aerosol design and technology should help improve patient compliance when it comes to prescribed home aerosol therapy.

Finally, home care providers have been actively addressing the issue of CPAP and bi-level positive airway pressure therapy for the

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*Its Treatment Compliance... Continued from page 46*

treatment of sleep disordered breathing. National standards have now defined compliance as therapy that is used 5 hours per night for 5 days a week. Most insurances will not continue reimbursement or purchase the unit for the patient unless compliance meets this standard. While home care providers may have their own specific policies, most compliance is generally monitored during the first 2 weeks and then at one month and three month intervals. This monitoring is done by questionnaires, telephone calls, patient visits and most commonly by "smart card" technology. The small card that comes with the CPAP unit is mailed back to the company or sleep lab and the information is downloaded for interpretation. Some units use a modem or a computerized number the device provides.

Reasons for non-compliance include: problems with interface comfort (mask or nasal prongs/pillows), humidification, pressure level, aesthetics or belief the treatment is not really necessary or that weight loss or change in lifestyle will correct one's apnea. These concerns can be addressed with proper mask fits, daily care of the interface, changing masks or prongs on a routine basis, using cool or heated humidity based on patient comfort and good patient education and explanation for need of therapy. Involvement in a sleep/awake group is very helpful with regard to a patient's perception of equipment use and need for treatment.

There is no panacea when it comes to patient compliance with prescribed care, whether in the hospital or the home. As clinicians, we know patients need to follow their therapeutic regimen and it is up to us, as professionals, to educate, explain the need for treatment and to follow-up on the prescribed therapy. Oftentimes, patients look to their respiratory therapist for direction and as a source of knowledge. RTs, especially in the home care setting, need to accept this role and meet the challenge of improving patient compliance with home care therapy.

*Osteomyelitis... Continued from page 52*

rates especially among elderly debilitated diabetic patients. Therapy for these infections is a combination or surgical debridement of dead tissue (or amputation), antibiotics, nutritional support and adjunctive hyperbaric oxygen when appropriate. The benefits of HBOT are improvement of tissue oxygen needed for healing, improvement of phagocyte function (to kill organism), reduce edema and improve circulation of affected areas. Treatment protocols vary slightly among these infections. For example, with one of the most common and serious of these infections, gas gangrene, also called clostridial myonecrosis the individual treatment is 2.5 to 2.8 ATA for 90 minutes. Three treatments are given the first day (usually after surgery), followed by two additional on the second and third days. The maximum number to treatment days is usually 10. Gas gangrene can be



**"You report to Anderson. Anderson reports to me... Who do I report to?"**

categorized as traumatic or spontaneous and is a rapidly spreading infection with mortality from 25% (traumatic) to 67-100% (when caused by C septicum).

For necrotizing fasciitis (referred to in the newspapers as the "flesh-eating bacteria") a rapid spreading inflammatory process located deep in the skin, the protocol is similar at 3 ATA for 90 minutes. Three treatments are given in the first 24 hours after surgery. After that, two are given daily until improvement seen and the schedule can be reduced to once daily. Typically the maximum number of treatments are 10-15 total. These types of cases, although seen infrequently, are considered urgent and time must be made available in a busy HBOT schedule to accommodate them. These patients are truly benefited by adjunct HBOT, but unfortunately it still is not always considered due to lack of awareness in the medical community. The marketing of HBOT benefits is a certainly a challenge but efforts must continue for improved outcomes.

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*Up With PEEP... Continued from page 54*

Using high PEEP when few unstable units exist or plateau pressure is kept below levels which fully "unfold" the lung and begin to overstretch it is not likely to help. If lung tissue is not inherently recruitable (or has not been opened by enough airway pressure), even high PEEP will not be effective; if plateau pressure is not in a threatening range (generally, above 25 cmH<sub>2</sub>O), high PEEP is not needed to avoid VILI—even if collapse persists and/or tidal re-opening recurs. In fact, using high PEEP in such settings alters blood flow, raises mean alveolar pressure, and may actually increase overall collagen strain. But when unstable and potentially recruitable units are prevalent and plateau pressures are high, applying sufficient PEEP is vitally important to minimize junctional stresses. It does so by reducing the number of units "at risk" (via sustained recruitment) and by preventing repeated cycles of tidal collapse/high pressure re-opening. Therefore, when considering the potential value of PEEP in preventing VILI, three vital elements are in play: 1) recruitability of injured tissue 2) magnitude of the end-inspiratory tidal plateau and 3) level of PEEP in relation to lung unit closing pressures. Just how much tissue can be recruited by using high airway pressure and sufficient PEEP is a topic currently under hot debate. Whatever their opinions on the prevalence of unstable units and inherent recruitability of the acutely injured lung, most knowledgeable investigators would agree that the lung should be exposed transiently to "high enough" pressure to open the collapsed units most at risk by some type of recruiting maneuver that involves high PEEP, and many would set PEEP decrementally as tidal pressures are ratcheted downward, depending on response. The process should be an empiric one and not governed by rigid numerical mandates.

Although the last word has not been written about PEEP's value and risk, we are coming progressively closer to reconciling VILI theory, laboratory science, and RCT confirmation. Considering what's clinically at stake and given the enormous expenditure of investigational effort and resources, it's about time.

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