been shown to significantly increase the distance ambulated during the 6WT.11 Furthermore, other factors such as psychological and mental health must be considered when evaluating performance during the 6WT or standard exercise testing. We have recently discovered that psychological status (measured via the SF-36, a 36-item questionnaire measuring eight health profiles) is related to 6WT distance ambulated (accounting for 33% of the variability) in patients with emphysema.7

Finally, the relationship of environmental toxins, such as passive smoke and nontobacco sources of carbon monoxide, to exercise performance has not been investigated, to our knowledge, in patients with heart failure. Although we did not specifically control for exposure to these toxins, the majority of patients in our study were hospitalized before testing was initiated. Urine cotinine levels were not drawn in our subjects, but future investigations could easily address the relationship of these toxins to exercise performance and reliability of the 6WT. It is reasonable to conclude that exercise performance would decline with increasing evidence of exposure to these toxins. It is uncertain how this would effect the degree of variability and subsequent reliability of the 6WT. This and other environmental and psychological effects must be carefully evaluated to determine the clinical utility of the 6WT.

The clinical utility of the 6WT and ease of administration make it appealing. However, we agree that reliability and unexplained variability in this test must be further evaluated in future large-scale, prospective studies.

Laurence P. Cahalin, MA
Boston University
Marc J. Semigran, MD
G. William Dec, MD
Massachusetts General Hospital
Boston

REFERENCES


Pressure-Controlled Inverse Ratio Ventilation

To the Editor:

Pressure-controlled inverse ratio ventilation (PCIRV) has been proposed as an alternative mode of ventilatory support in the setting of ARDS. The main idea motivating this ventilatory support was the heterogeneity of the lung in this disease. PCIRV would therefore be an interesting mode by creating an intrinsic positive end-expiratory pressure (PEEPi) and by limiting the barotrauma (but not volutrauma) through pressure control. The difference between the external PEEP (PEEPe) and the PEEPi is that in the latter, there is a recruitment of alveolar units with slow time constants due to the increased inspiratory time, resulting in a more homogenous ventilation of the lung.1 In the paper by Ludwigs and colleagues (August 1996),2 the authors compare two ventilatory modes, PCIRV and volume-controlled ventilation (VCV), with PEEP in the normal rabbit lung. Using a normal lung is already a limitation of the use of PCIRV, which is designed for heterogeneous lungs. In PCIRV and VCV, the authors reach the same tidal volume. PCIRV is designed to tolerate a level of hypoventilation, therefore limiting the tidal volume compared to VCV. It seems, therefore, difficult to compare these two ventilatory support modes, reaching the goals of the first one at the expense of the second one. Finally, the authors estimate they compare these two modes at equal levels of end-expiratory alveolar pressure. They apply a PEEPe of 5 cm of H2O in VCV. In PCIRV, if static PEEP is below 5 cm H2O, they add an external PEEP of 1 or 2 cm H2O. Is it really fair to compare the effects of PCIRV, which is supposed to induce an intrinsic PEEP, by adding an external PEEP to reach the same end-expiratory alveolar pressure? Even though the authors do not have oxygenation goals or ventilatory patterns criteria, they conclude that PCIRV causes an alteration in lung epithelial or membrane function. But a question remains, do we need to meet VCV goals to set PCIRV parameters?

Benoit PH Guery, MD
Hughes Georges, MD
Olivier Leroy, MD
Service de Réanimation Médicale
Hôpital Chatilliez
Tourcoing, France

Reprint requests: Dr. B. Guery, Service de Réanimation Médicale, 133 Rue du Pdt Coty, 59208 Tourcoing, France

REFERENCES


To the Editor:

We welcome the interest of Dr. Guery and colleagues regarding our article concerning inverse ratio ventilation. We also appreciate the opportunity to discuss the issues raised by the authors.

We agree that pressure-controlled inverse ratio ventilation (PCIRV) is intended for use in patients with severe gas exchange

290 Communications to the Editor