
ARTICLES

Clinical efficacy and cost benefit of pulse flow oxygen in hospitalized patients

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Pulse flow oxygen administered during early inspiration is a promising approach to oxygen conservation. Previous short-term studies show equivalent arterial PO₂, 55 to 60 percent oxygen savings, and no reduction of nasal humidity when compared with continuous flow nasal cannula oxygen. This study compares the clinical efficacy of pulse flow and continuous flow oxygen in 100 patients recently hospitalized for diseases requiring O₂ therapy. In an unblinded crossover design, pulse and continuous O₂ were administered alternately during four 5 1/2-hour periods. Oxygen saturation was monitored continuously during the 23- hour study. Mean SaO₂ on pulse flow (95.6 +/- 2.7 percent) was clinically the same as continuous flow (95.3 +/- 2.6 percent). Mean SaO₂ on pulse flow during the 30 minutes before or after each crossover (95.5 +/- 3.3 percent) was similar to continuous flow during the 30 minutes near crossover (95.3 +/- 3.1 percent). It is concluded that the two delivery systems produce similar levels of SaO₂ over the course of a day and night. Analysis of potential cost savings achieved by use of the device for a 350-bed hospital suggests a savings of about \$50,000 yearly when accompanied by termination of oxygen humidification.