Bronchodilator Therapy Assessment Tool in Adult Intensive Care Units for Patients on Mechanical Ventilators

Nebulized medication can be used to dilate the smooth muscle in the bronchial tree. Patients who are receiving mechanical ventilatory support are generally, very ill. In order to optimize patient care and utilization of personnel resources at the University of Utah Hospitals, analysis of bronchodilator therapy of mechanically ventilated adult patients was done. The aerosol medications used were beta-2 agonists and anticholinergic bronchodilators to help relax the smooth muscle in the airways and reduce bronchospasm. These types of drugs have side effects of tachycardia, nausea, tremors, irritability, and others.

The study group for this research was charts from patients' hospitalizations from January to April of 2002. The cases that were selected for this study during this time frame met the following criteria: 1) an adult patient on a ventilator, 2) in an intensive care unit 3) ordered to receive bronchodilator treatments. The following data were collected on each case:...... This long sentence is fine, except Karen recommended lung be added to compliance at the end of the sentence. Therefore...total respiratory rate and lung compliance. These data were gathered four times on each patient: 1) before the aerosol therapy was initiated, 2) immediately after the initial treatment, 3) twenty four hours after therapy was initiated, and 4) forty eight hours after therapy was initiated. This was done to see what percentage of mechanically ventilated adults had a positive effect from their ordered bronchodilator aerosol therapy.

We discovered, that of the thirty four completed cases, we had a 50% positive effect and a 50% negative effect. Pulmonary diagnosis (pulmonary edema and pleural effusion were excluded) did not clearly predict a bronchodilator response. Ten of 18 with a pulmonary diagnosis responded, and 8 of 16 without a pulmonary diagnosis responded to bronchodilators. This was proven by having the various ventilator parameters that were recorded compared to the pretreatment data.

In conclusion, this information has shown us that there is an overuse of bronchodilator therapy in patients that are on mechanical ventilators. The Respiratory Department at the University of Utah will use this data to help modify ordering patterns.