

CAN THE VAPOTHERM HIGH FLOW NASAL CANNULA SYSTEM SUBSTITUTE FOR NON-REBREATHING MASK IN SELECT PATIENTS

Carl C. Voss, PhD, RRT, Solomon Johnson, Jr. RRT, Zaid Haile, RRT
 Ronald Musiol, RRT, Toni Christian, RRT- Respiratory Care
 Department Suburban Hospital, Bethesda, Maryland

OBJECTIVE: To determine if “Vapotherm” a new high flow, high humidity nasal cannula oxygen delivery system can be used in place of a non-rebreathing mask in select patients. We wanted to determine if the vapotherm could maintain the patient’s oxygen saturation at levels similar to that achieved by a non-rebreathing mask. **DESIGN:** A random interventional substitution of Vapotherm on patients requiring non-rebreathing mask to maintain oxygen saturation greater than 90%. **SETTING:** Inpatient, a Community Level 2 Trauma hospital. **METHODS:** We substituted the vapotherm high flow nasal cannula on 15 patients who required a non-rebreathing mask to maintain their oxygen saturations greater than 90%. The patients ranged in age of 38 to 65 years and there were twelve males and three females. Oxygen saturations were monitored continuously using Marquette and Nellcor oxygen saturation monitors. Patients were located in the step-down unit or the acute medical care floor. The patients’ diagnoses were interstitial pulmonary fibrosis (1), asthma (1), lung cancer (5), and pneumonia (9). We obtained an order from the physician to switch the patients to the vapotherm system with Oxygen saturation titration orders of 92%. We explained the change to the patient and started each patient at a flowrate of 10 liters per minute and gas temperature of 38 degrees centigrade. We increased the flowrate to obtain the baseline saturation of the non-rebreathing mask. We asked the patient his/her comfort level with the high flowrate and temperature. Oxygen saturation was continuously monitored and recorded on a flowsheet every four hours. **RESULTS:** Fourteen (14) patients tolerated the vapotherm during the trial period as originally initiated and one (1) patient could not tolerate the temperature, which was lowered to 36 degree centigrade. The average oxygen saturation on non-rebreathing mask was 93.5% and average oxygen saturation on the vapotherm was 92.9 % at an average flowrate of 29 liters per minute. **CONCLUSION:** The Vapotherm system can be used on select patients in lieu of a non-rebreathing mask. Patients appreciated the conveniences of the nasal cannula versus the non-rebreathing mask. An added benefit may have been the increased secretion mobilization reported by the patients but not included in the evaluation. OF-03-034