Occurrence of Ventilator-Associated Pneumonia using Tracheostomy Tubes with Subglottic Secretion Drainage

Clinical Summary Sheet

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AIM
Subglottic secretions above the endotracheal cuff are associated with colonization of bacteria in the lower respiratory tract, causing ventilator-associated pneumonia (VAP) in critically ill patients who require mechanical ventilation. The purpose of this study was to determine if incidence of VAP can be reduced with use of suction above the cuff with Portex® Blue Line Ultra® Suctionaid® tracheostomy tubes.

METHODOLOGY
The design of this investigator-initiated* trial was a matched cohort study with historical control in three academic Italian intensive care units (ICU). The treatment group consisted of patients admitted to ICU requiring mechanical ventilation who were treated with the Portex® Blue Line Ultra® Suctionaid® tubes to allow for suction above the tracheostomy cuff. Historical data from tracheostimized patients without the ability to perform suction above the cuff were used as the control group. Propensity score matching was utilized to balance the two groups with respect to timing of tracheostomy, age, gender, SAPS and SOFA covariates. The primary endpoint was occurrence of VAP incidence at 28 days post intubation, as determined by clinical pulmonary function score.

RESULTS
A total of 125 patients were enrolled in the treatment group and were treated with subglottic secretion drainage through the tracheostomy tube, and 232 patients without suctioning were selected as the control group. Overall incidence of VAP was 10 patients (8%) in the treatment group and 45 patients (19.4%) in the control group (p=0.004; OR=0.361; CI=0.175, 0.745). After propensity score matching, incidence of VAP was 8.3% and 21.7% in the treatment and control groups, respectively (p=0.0408; OR=0.329; CI=0.109, 0.990).

CONCLUSIONS
The authors concluded that subglottic secretion drainage with the Portex® Blue Line Ultra® Suctionaid® tubes reduces the incidence of VAP in critically ill patients requiring ongoing mechanical ventilation with tracheostomy.

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