FLATLINE HEALTH LLC
Science. Technology. Research. Education

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Clinical Experience in Long-Term Care Facility using SIMEX Subglottic Aspiration Device

Preventing ventilator-associated pneumonia (VAP) in the long-term ventilator unit has been a priority. One of the major problems that contributes to the level of VAP in long-term care has been the use of tracheostomy tubes and the improper management of cuff pressures. The tracheostomy tube bypasses the normal upper respiratory defense systems and is an open gateway to the lower sterile respiratory tract for bacterial colonization. The tracheostomy tube cuff is used to seal the airway to provide positive pressure mechanical ventilation. This cuff provides a platform for aspirated secretions to pool and eventually leak around into the sterile lower airway.

The removal of secretions accumulated into the subglottic space is key to prevention of VAP. In September, 2014, we switched all patients in our facility from standard to subglottic tracheostomy tubes. Using a 20 ml syringe, the Respiratory Therapists were manually aspirating the subglottic ports 4x/shift, which became labor intensive and ineffective. The subglottic ports would also frequently occlude, resulting in the Respiratory Therapist having to lavage ports, further increasing the risk of VAP. The average manual suction volume obtained by manual aspiration was 30 ml/day.

In March, 2015, we instituted a trial with SIMEX Automated Subglottic Aspiration System. Over the course of the eight-month evaluation, we had the SIMEX device on 10 patients. The VAP rate on these 10 patients was zero during the evaluation period. The use of the SIMEX provided patient comfort and efficient removal of a large volume of secretions, 90-300 ml/day, as compared to 30 ml/day using the syringe method. Maceration of the tissue surrounding the stoma had decreased significantly, resulting in less changes of the tracheostomy gauze and ties. Patients reported they were comfortable on the device, with no reports of tracheal discomfort or signs of tracheal wall adhesion. As a result, the facility saved a considerable amount of money and resources in VAP treatment, as well as decreased transfer rates to hospital emergency rooms.

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Based on my clinical experience, use of the SIMEX Automated Subglottic Aspiration System helped reduce the risk of pneumonia and acute respiratory distress syndrome (ARDS) by removing micro-aspirated secretions from the subglottic space in tracheostomized patients. Especially during the Covid-19 pandemic, SIMEX should be used in conjunction with mechanical ventilation to help reduce secondary bacterial infection risks, mitigate ARDS, and possible further damage to the lungs.

Overall, we have found SIMEX to be a more effective and efficient therapy than other currently used modalities, less time consuming for staff, more effective in minimizing cross-contamination, and cost-effective.

Sincerely yours,

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