

**Effect of open and closed suction on Ventilator-associated Pneumonia and
hemodynamic status in intensive care patients**

A Thesis

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**Title: Effect of open and closed suction on Ventilator-associated Pneumonia and hemodynamic status
in intensive care patients**

Background :Endotracheal suctioning is used for cleaning of airway secretions in patients under mechanical ventilation .Right out of the way to prevent Ventilator associated pneumonia and hemodynamic status is important. The aim of this study was comparison of endotracheal suctioning by open and closed system on patients Ventilator associated pneumoniaand hemodynamic status.

Methods: This study is a clinical trial that 86 admitted patients in ICU in accordance with endotracheal suctioning was divided into two groups, open and closed system. Systolic and diastolic blood pressure, mean arterial pressure (MAP), heart rate, arterial oxygen saturation (SPO₂), respiratory rate and occurrence of dysrhythmia were recorded immediately, 2 and 5 minutes after endotracheal suctioning by open and closed system in patient's questionnaires.

And after 72 hours patients were evaluated for VAP by clinical pulmonary infection score.

Results: Incidence of VAP in closed system significantly lower than the open technique ($P=0.016$). Before suctioning, hemodynamic index in two groups was similar. In open group, diastolic blood pressure, mean arterial pressure, heart rate and respiratory rate immediately, 2 and 5 minutes after suctioning were increased more than closed system ($P>0.05$). Systolic blood pressure, SPO₂ and incidence of dysrhythmia in two groups were similar.

Discussion: Endotracheal suctioning by closed system decreases incidence of VAP and lower effects on patient's hemodynamic status ICU patients. Endotracheal suctioning by closed system is recommended.

Key Words: VAP, hemodynamic status, Open suctioning, Closed suctioning, intensive care Unit