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Instillation of Normal Saline in Endotracheal Suctioning

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Instillation of Normal Saline in Endotracheal Suctioning

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PATIENT CARE ISSUE

“Suctioning is one of the most common procedures in the ICU and high dependency wards; its aim is to remove respiratory tract secretions, thus maintaining airway patency and preventing complications of secretion retention” (Paratz, 2009 p. 1).

An important and debated part of this care is whether the use of normal saline (at a delivery of 2cc-10cc) before suctioning of an endotracheal tube causes more harm than good.

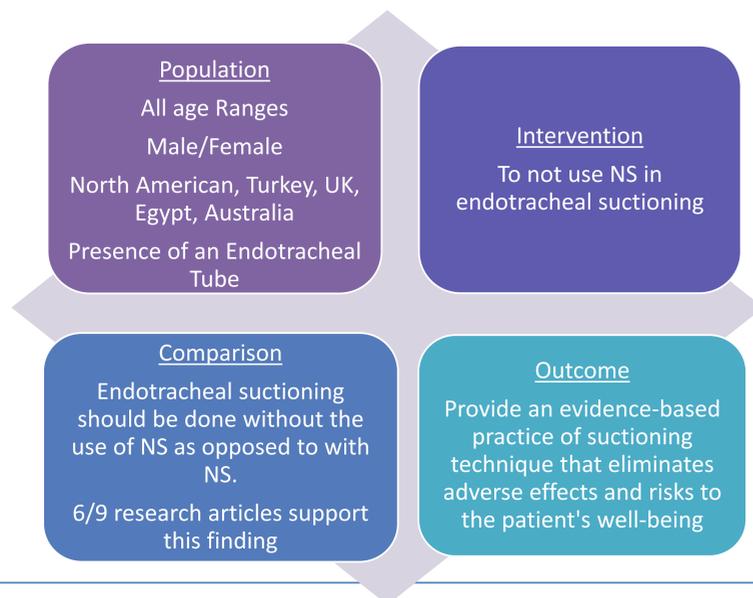
An intubated or mechanically ventilated patient may need to be “suctioned between three and twenty-four times a day” (Zahran, 2011, pg. 31) Due to the many physiological effects already endured by these patients, it is important to determine if the use of NS potentiates harmful effects.

SYNTHESIS OF EVIDENCE

A total of 9 studies meeting these criteria were found; 2 articles were not used because they did not meet the 5 year criteria (Akgul, 2002) and were of clinical reference (Celik, 2006). These two articles were only used for discussion and recommendation purposes.

- Three out of the seven articles found that patients experienced an increase of dyspnea with the use of NS before endotracheal suctioning
- Four out of the seven articles noted impaired or inadequate gas exchange after the instillation of NS
- Three out of the seven articles found that the instillation of NS before endotracheal suctioning lead to feelings of anxiety, dread & increased pain
- Three out of the seven articles agree that there is an increased sputum recovery with the use of NS
- There are conflicting views on whether normal saline is beneficial in eliciting a cough reflex. The AARC states that it enhances the clearance of secretions, while Halm notes that it increases the risk of ICP and arterial pressure
- Three of the seven articles discuss potential processes effected by the instillation of NS such as pH, BP, HR, saline entrapment & risk for infection

EVIDENCE-BASED PRACTICE QUESTION



RESULTS

There is inadequate evidence based practice to show the benefits of the use of Normal Saline with endotracheal suctioning.

There is inadequate evidence based practice to show the benefits of endotracheal suctioning with versus without saline instillation.

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

The use of Normal Saline during endotracheal suctioning is not recommended. Instead, “adequate hydration and humidification, mucolytic agents and effective mobilization should be used.”(Zahran, 2011, pg. 23)

Using Normal Saline during suctioning could potentially subject patients to:

- Dyspnea
- Compromised oxygenation status
- Increase in anxiety and discomfort
- Physiological stressors

REGISTERED NURSE INTERVIEW

Dayton Children’s Hospital Policy Notes: Instillation of NS during endotracheal suctioning is not recommended.

Nursing Implementation at Dayton Children’s: Samantha Shepherd BSN at Children’s Medical Center in Dayton, OH, states “Nurses in the ICU and PICU use NS during endotracheal suctioning often; Nurses use NS when secretions are extra sticky or hard to loosen”, says Shepherd (personal communication, October 16, 2012).

METHODS

Databases

- MEDLINE
- PUBMED
- CINAHL

Keywords

- Endotracheal
- Suctioning
- Normal Saline

Years

- 2007-2012

LIMITATIONS

- Small sample size
- Insufficient amount of current research

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