Ventilator-Associated Pneumonia

By Theresa Su'a

Research question

Does effective nurse-administered oral cares reduce the incidence of ventilator-associated pneumonia, in mechanically ventilated adults, in intensive care units?

Ventilator-associated pneumonia (VAP) is one of the most common hospital-acquired infections and likely to develop in patients who have been on mechanical ventilation for more than 48 hours (Cutler & Sluman, 2014).
Educational interventions can improve compliance and increase knowledge of critical care nurses providing oral cares, oropharyngeal suctioning and positioning of mechanically ventilated patients as methods of VAP prevention (Liao et al, 2014)

Oral cares using chlorhexidine

Use chlorhexidine (antibacterial agent) swabs, rinses and gels to perform effective oral cares 4 times daily to mechanically ventilated patient

The chlorhexidine will reduce the colonisation of bacteria within the oral cavity (Villar et al., 2016)

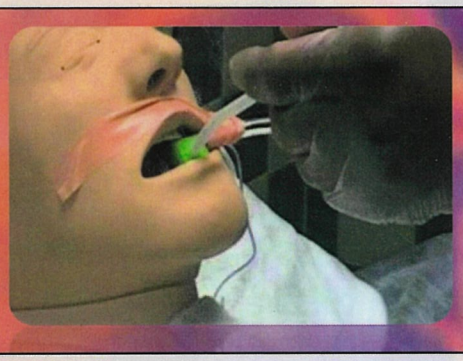
Patient positioning

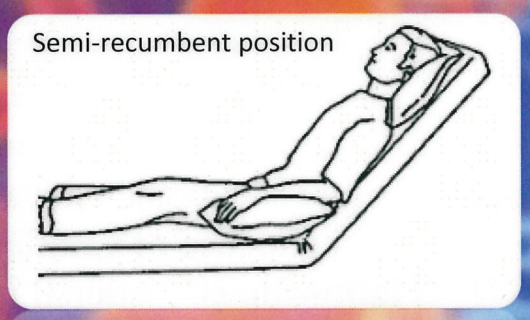
Positioning patients in a semi-recumbent position, or a reverse Trendelenburg position is effective in preventing the development of VAP, by preventing gastroesophageal reflux and the aspiration of colonized stomach content (Critical Care Nurse, 2012)

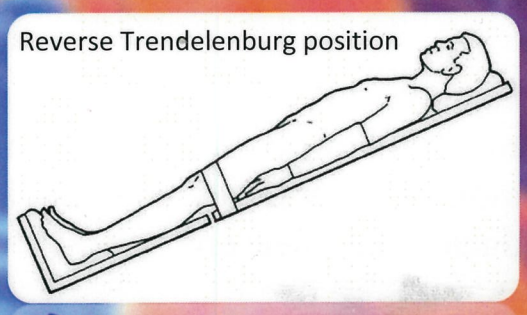
Oropharyngeal suctioning

Ideally, a saliva ejector should be used to continuously suction oropharyngeal secretions

This reduces risk of contaminated oropharyngeal secretions from leaking through and reaching into the lungs (Chow et al, 2012)







Recommendations

1. Introduction of in-service educational trainings to improve standard protocols already in existence for VAP prevention, a rationale for this recommendation is to better the knowledge of critical care nurses.
2. Further studies are recommended to be conducted outside Western countries, where there are limited resources, this could potentially provide a wider variety of alternative, and possibly more cost-effective VAP preventative measures to be used.

Relevance to critical care wards

- Reduce risk of patients developing VAP
- Shorter patient hospitalisation period
- Prevention of VAP is more cost-effective than treatment
- Increase nurse knowledge and improve compliance to VAP prevention measures

Conclusion

The prevention of VAP cannot be achieved by oral cares and using chlorhexidine alone, regular suctioning of oropharyngeal secretions and correct positioning work simultaneously to effectively reduce the incidence of VAP
Critical care nurse directly provide care for ventilated patients, therefore improving their understanding of VAP prevention measures will promote the reduction of VAP.

(Villar et al., 2016).

References

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My literature review findings target nurses, specifically critical nurses who closely associate and provide cares to mechanically ventilated patients.
If well-constructed, a poster allows the presentation of complex information and key findings in a quick, simplified and visually appealing way (Miracle, 2008).
I have chosen to submit a poster as a mean of information presentation, as posters have the effective ability to convey important study outcomes to potentially large audiences, in a variety of non-professional and professional settings (Miller, 2007). Posters allow key findings to be visually displayed in an easy-to-read format, and it enables its audiences to view it at their own time, taking away the key messages of something which is ideally much more complex (Miracle, 2008). Posters grasp the attention of viewers, potentially allowing a transfer of knowledge from presenter to audience, and thus increasing understanding and changing attitudes (Ilic, 2013).
Because critical care nurses tend to work in fast-paced environments, an effective method of information transfer should be through a method that is quick, easily accessible and focused, which is possible through a well-constructed poster (Ilic, 2013).

PECOT Model

PECOT	INFORMATION RELATING TO QUESTION	EXPLANATION
POPULATION	Adults who have been mechanically ventilated in an Intensive Care Unit, who are therefore at high risk of developing ventilator-associated pneumonia	There were limited studies showing an effective outcome of oral care in reducing the development of pneumonia in neonatal and paediatric mechanically ventilated patients, therefore I excluded this population from my research.
EXPOSURE (INTERVENTION)	Mechanically ventilated patients who received ventilator-associated pneumonia prevention measures, following additional staff educational interventions	I will be researching on literature that compares the incidence of ventilator-associated pneumonia before additional educational interventions, and the incidence of ventilator-associated pneumonia following educational interventions
CONTROL (COMPARISION)	Mechanically ventilated patients who received nurse-administered ventilator-associated pneumonia prevention measures, without additional educational intervention, and followed the standard protocols of their Intensive Care Unit (ICU)	I will be researching the effectiveness of the preventative ventilator-associated pneumonia educational interventions by comparing the incidence of ventilator-associated pneumonia before educational interventions, and after educational interventions were put in place.
OUTCOME	Staff awareness on the importance of ventilator-associated pneumonia prevention, specifically application duration, time, correct techniques and product selection, significantly reduced the incidence of ventilator-associated pneumonia developing in mechanically ventilated patients in ICU.	Most literature I reviewed in my research strongly supported the inclusion of additional staff interventions.
TIME	-	Within my research there were a variety of methods used in the studies conducted, and a wide range of trial durations, yet most outcomes produced similar results, therefore I didn't find time as a relevant component to my research

References

Ilic, D., & Rowe, N. (2013). What is the evidence that poster presentations are effective in promoting knowledge transfer? A state of the art review. *Health Information and Libraries Journal, 30*(1), 4-12. doi: 10.1111/hir.12015

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