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DOES THE SELECTION OF ENDOTRACHEAL SECURING DEVICES IMPACT THE NUMBER OF UNPLANNED EXTUBATIONS IN A NEONATAL POPULATION?

Lindsey Borock, Ron Dechert; Respiratory Care, University of Michigan, C.S. Mott Children's Hospital, Ann Arbor, MI

Background: Unplanned extubations (UEX) represent a serious adverse event that can result in harm to our patients. Numerous endotracheal securing devices have been applied across patient populations in an effort to mitigate the potential for UEX events. Our current neonatal practice involves the application of two different securing devices. The choice of which device to use is at the discretion of the physician, nurse or Respiratory Therapist. The purpose of this study was to examine the incidence of UEX associated with each securing device in our neonatal population to assist clinicians in best practice choices for UEX mitigation. Method: This is a retrospective analysis conducted on all UEX reports for patients admitted to our neonatal intensive care unit between June 1st, 2014 through February 28th, 2015. During this period we observed 184 episodes of endotracheal airway support totaling 2882 days. The two securing devices used during this period were either Marpac tape or Neotech Neobar holders. A total of 24 patients involving 37 UEX events were reported through our risk management system during this period. The 37 incidents of UEX represent 20% of all ETT airway events. We reviewed each UEX report and the patient's record. During the chart review we extracted information associated with the size (weight-kg), age (GA weeks), endotracheal tube (ETT) size, cuffed versus uncuffed and securing device recorded at the time of the UEX and for the duration of the airway use. Results: Analysis of the UEX events are reported in Table 1. As shown, most of the patients (24/27) used both forms of securing devices during the patient's intubation duration. A total 17 (46%) UEX events occurred while using the Marpac tape. Conversely, 20 (54%) UEX events occurred while using the Neobar device. Although these numbers favor the use of tape, the difference is statistically significant. We were unable to analyze for difference between devices associated with patient size, weight, GA and tube selection as most of the study cohort (89%) employed both forms of securing device. Conclusions: Our preliminary analysis does not indicate any significant advantage in reducing unplanned extubations in this population based upon the type of securing device employed. Further analysis and observation is required to determine if other factors, such as secretions, sedation or activity, may be attributed to these events. Disclosure: None. This study was reviewed by the UM-IRBMed (HUM00099776).
Sponsored Research - None

Descriptive Statistics of Study Cohort (n=27)

Cohort Characteristics	Tape	Commercial Device	Significance (p=)
Total UEX events	17	20	0.485
Total device days	478	484	
Median (IQR) device days	8 (6,28)	15 (6,24)	0.181