Abstract #95474

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Comparison of Oral and Axillary Temperatures in Intubated Pediatric Patients

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Purpose:
In a pediatric intensive care unit (PICU) in a Midwestern medical center, it was questioned whether oral temperatures are accurate in intubated patients due to heated gases passing through the endotracheal tube. Practice within the studied unit was to obtain axillary temperatures, but research shows this method has greater variability than other forms of measurement. Staff within the unit sought more concrete evidence whether oral temperatures were a reliable form of temperature measurement within the PICU.

Background:
Literature within adult intensive care unit populations showed that oral temperatures in intubated patients was not significantly affected by heated gases passing from the ventilator through the airway. This study aimed to determine if the same was true in pediatric patients.

Methods:
Patient age groups were delineated into neonate (<28 days), infant (28 days to 12 months), and children (1 to 18 years). These age ranges were selected based on patient volumes cared for within the studied unit. Oral and axillary temperatures were obtained during normal vital assessment intervals within the unit. A group of nursing staff were recruited and trained for accurate temperature measurement within the study parameters. 25 sets of data were collected for each age group. Descriptive statistics and Bland-Altman plot interpretation were used to evaluate confidence intervals for each age group.

Results:
High positive correlation was seen via Bland-Altman interpretation for all age groups. Infants showed slightly lower positive correlation in comparison to the other age groups. Correction factors were calculated for each age group, which allow prediction of an axillary temperature based upon the measured oral temperature.

Conclusion:
Oral temperature measurement is an acceptable temperature measurement for intubated pediatric patients. This study serves as a pilot due to the small number of patients included within the study. More robust data should be sought by studying more patients as well as constructing data collection that includes patient environmental, diagnostic, and equipment factors.
Title:
Comparison of Oral and Axillary Temperatures in Intubated Pediatric Patients

Abstract Describes:
Completed Work/Project

Applicable category:
Clinical

Keywords:
Intubated pediatric patients, axillary temperature and oral temperature

References:

Abstract Summary:
The researchers of this study aimed to determine if the heated gases passing from mechanical ventilators through endotracheal tubes had a significant impact on oral temperature measurements as compared to the studied unit’s standard of axillary measurements.

Content Outline:
Background
- Temperature measurement an important vital sign
- No one good temperature measurement across the age span of pediatrics
- Paucity of research studying oral temperatures in intubated patients with no research specifically addressing the age span of pediatrics

Purpose
• Determine the efficacy of oral temperature measurement in intubated pediatric patients in comparison to axillary temperatures

Methods
• Quasi-experimental design to study the axillary and oral temperatures in intubated pediatric intensive care unit patients
• Study conducted in a Midwestern pediatric hospital within an academic medical center
• Patients age groups divided into neonate (<28 days), infant (28 days to 12 months), and children (1 to 18 years)

Results
• High positive Pearson Correlation of axillary and oral temperatures in all age groups
• Bland Altman Analysis produced temperature correction factors for each age group

Conclusion
• Oral temperature measurement a viable alternative for each age group studied
• Correction factors allow for prediction of axillary temperature based upon measured oral temperature
• This study serves as a pilot due to number of studied participants