PERI-OPERATIVE HYPOTHERMIA: ACTIVE VS PASSIVE WARMING

Primary Investigators: Jenise Rice, MSN, RN, CPAN
UT MD Anderson Cancer Center, Houston, Texas
Co-Investigators: Karen Salinas, BSN, RN, CPAN; Kate Mask, MSN, RN, CPAN;
Elsy Puthenparampil, MSN, RN-BC, CPAN

Identification of the problem
Peri-operative hypothermia has been associated with a range of adverse effects. During a random chart audit, an inconsistency was discovered in monitoring temperatures within 15 minutes of the patient’s arrival to the Post Anesthesia Care Unit (PACU) per ASPAN standards. Many newly hired staff were not aware of this standard and its importance as it relates to the treatment of hypothermia. This caused a problem in timely recognition and management of hypothermia in patients admitted to PACU. In order to achieve the best outcomes for patients with hypothermia, a literature search was performed to determine the best method of warming.

EP Question/ Purpose:
The EBP team reviewed the literature for best evidence on the most effective method to maintain normothermia in adult PACU patients: active or passive warming?

Methods/ Evidence:
A systematic literature review was conducted using key words: perioperative warming, perioperative hypothermia, perioperative normothermia in electronic databases including PubMed, SCOPUS, CINAHL, Cochrane and Ovid. The search was limited to Humans, Adult patients, and English. Thirteen articles were selected.

Significance of Findings/Outcomes:
Maintaining normothermia throughout the perioperative environment reduces the total costs for anesthetic treatment through lower incidence of mechanical ventilation, reduced intraoperative blood loss, and shorter PACU stays. Active warming with circulating water garments and forced-air warming were more effective at maintaining perioperative normothermia and preventing postoperative hypothermia compared to passive warming interventions. Circulating water garments were found to be more effective in active warming than forced-air warming. A unit wide education using PowerPoint presentation and team huddles preceded the implementation of the Clinical Practice Guideline. Clinical leaders in the unit function as resource in supporting and monitoring the new practice.

Implication for peri-anesthesia and future research:
Evidence supports the implementation of Clinical Practice Guideline to standardize monitoring and management of hypothermia in PACU and the use of forced-air warming to improve patient outcomes that include decreased rates of surgical site infection, increased thermal comfort and decreased PACU stay. Further research on the advantage of active warming with circulating water garments compared to forced air warming is recommended.