

A PROSPECTIVE STUDY COMPARING THE STANDARD OF CARE TO ACTIVE WARMING AND ADMINISTERING WARMED FLUIDS PREOPERATIVELY TO PREVENT POSTOPERATIVE HYPOTHERMIA

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Introduction: Inadvertent hypothermia is defined as hypothermia in the postoperative period below 36 degrees Celsius (96.8 F). Inadvertent hypothermia puts a patient at risk for numerous complications.

Identification of the problem: There are conflicting reports to benefits of preoperative forced air warmers and little evidence demonstrating that pre-warmed fluid preoperatively influences postoperative hypothermia.

Purpose of the Study: The purpose of this study is to evaluate if administering warmed fluids or using forced air warming preoperatively impacts inadvertent postoperative hypothermia.

Methodology:

Design: Descriptive, comparing three groups' postoperative temperature upon arrival into PACU.

Control: Standard preoperative warming: warmed blankets.

Intervention A: Active warming preoperatively with forced air warming gown.

Intervention B: Standard preoperative warming plus warmed IV fluids.

Sample: Patients who meet inclusion criteria.

Control: One month of patient temperatures. Sample Size for control was 219.

Intervention groups: All consecutive patients for two consecutive months. Sample size for intervention A was 272, sample size for intervention B group was 207.

Measurement: The measurement of the incidence of inadvertent hypothermia is the number of post-operative patients per month whose first recorded temperature in PACU is below core 96.8 degrees Fahrenheit.

Patient temperature utilizing a probe thermometer, temperature was taken utilizing the standard of care which was oral when possible or axillary.

Results: There is a statistically significant difference between control postoperative temperature and gown postoperative temperature ($t=4.87$, $p<0.01$, $CI=0.198, .464$).

There is a statistically significant difference between control postoperative temperature and fluids postoperative temperature ($t=2.25$, $p=0.05$, $CI: 0.020, 0.304$).

Discussion: The incidence of inadvertent hypothermia with preoperative warming dropped markedly and was maintained with continued use of the warmed fluids preoperatively only, due to cost. Warming preoperatively resulted in a statistical difference between the initial postoperative temperature of intervention A and B compared with control. Although the difference in temperature may not have clinical significance, this finding lends support that preoperative active warming does impact patient temperature and therefore the incidence of inadvertent hypothermia.

Conclusion: Warming should commence on all preoperative patients using either statistically significant method, forced air warming or warmed fluids. All preoperative patients are now warmed with warmed fluids; therefore, the standard of care was changed based on this research.

Implications for perianesthesia nurses and future research:

- Further determination and stratification of risk factors for inadvertent hypothermia needs to be studied so that those with risk factors supported by strong evidence could be warmed preoperatively using a risk stratification and intervention protocol.