

Maintenance of Therapeutic Hypothermia During Critical Care Interfacility Transport



Objective

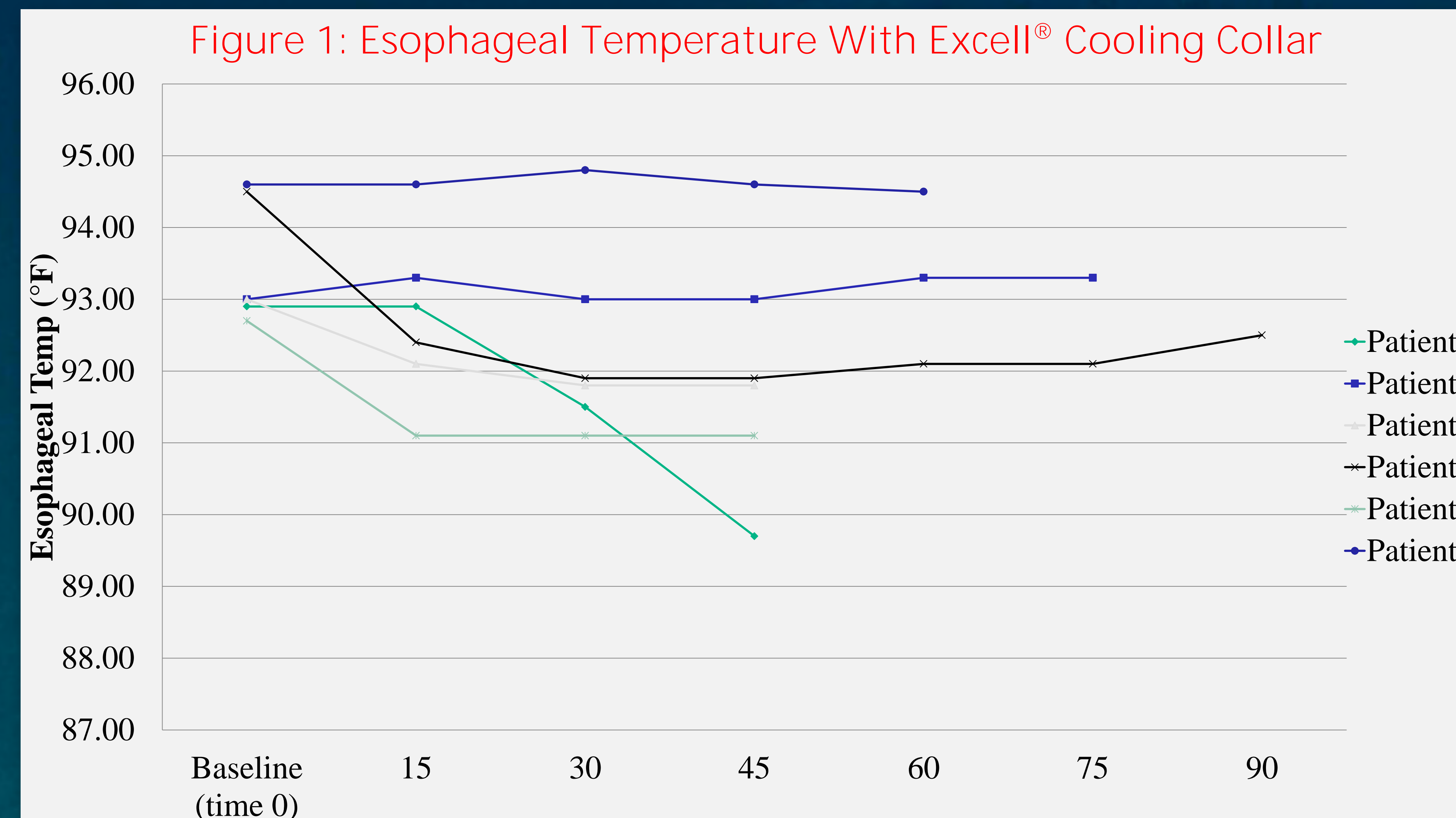
To determine if the EXCEL® Cooling Collar can be used to prevent core body temperature rise during critical care interfacility transport of TH ROSC patients



Introduction

- Early initiation of mild therapeutic hypothermia (TH) is currently a standard of care following cardiac arrest (CA) and has been demonstrated to decrease morbidity and mortality.
- Current guidelines recommend patients reach target temperature (32-34°C) within 6 hours of return of spontaneous circulation (ROSC).
- Earlier cooling has been shown to improve outcomes compared to instances where cooling is delayed.
- When ROSC patients require transfer from a referral emergency department to tertiary care, the initiation of TH is often delayed until transport teams arrive because there are no proven strategies to maintain TH during transfer.
- To date, no trials have evaluated the effectiveness of any interfacility transport TH maintenance strategies.
- This study aims to determine if the EXCEL® Cooling Collar can prevent core body temperature rise during transport of TH patients.

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Methods

- This is an IRB approved prospective case series of all patients for whom TH was initiated at a referral ED and accepted for admission at NHRMC between 1 March 2013 & 1 April 2014.
- All patients received a 2000mL iced (4°C) Normal Saline (NS) infusion to standardize initial cooling.
- Following the NS bolus, the transport team obtained a baseline esophageal temperature and applied the EXCEL® Cooling Collar; all other cooling strategies were discontinued.
- Shivering was managed following existing protocols.
- Esophageal temperatures were recorded every 15 minutes, and the cooling element exchanged every 20 minutes per manufacturer recommendations.
- Final temperatures were documented upon arrival at the intensive care unit. A paired t test was performed to determine if significant temperature change occurred.

Results

- Of the 18 patients transferred for post arrest TH, 6 had their NS bolus completed, had the EXCEL® Cooling Collar deployed and were included in the study.
- Patients experienced a mean temperature decrease of 1.28°F (Figure 1), which was found to be statistically insignificant ($p=0.0537$).
- No complications including re-arrest, new hypotension, or death occurred while the study device was in use.



Conclusions

- The EXCEL® Cooling Collar appears to prevent statistically or clinically significant core body temperature rise in patients for whom TH was initiated.
- All patients remained within the target temperature range.
- Limitations of this study include the lack of a control group. Additionally, patient outcomes and initial rhythms were not monitored as a part of this trial.
- Finally, this initial abstract has a small n and further research is being completed with a targeted goal of 30 patients.



References

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