A506 - Esophageal temperature management in patients suffering from traumatic brain injury

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Introduction:
Targeted temperature management of patients who have suffered a traumatic brain injury is often used in the hope of preventing further insult to the brain; however, there is no uniform approach to managing temperature either locally, nationally or internationally, and maintenance of goal temperature in this patient population is often challenging due to hypothalamic injury. We sought to evaluate the feasibility and safety of an esophageal heat transfer device (EnsoETM, Attune Medical, Chicago, IL) to perform temperature management of patients suffering from traumatic brain injury.

Methods:
This was an IRB-approved prospective study of patients undergoing temperature management after traumatic brain injury. Patients were treated with an esophageal heat transfer device connected to an external heater-cooler, and maintained at target temperature for at least 24 hours. Patient temperature obtained via Foley catheter was recorded hourly, and the deviation from goal temperature during treatment reported.

Results:
A total of 12 patients were treated from August 2015 to May 2016. Temperature targets during treatment ranged from 34.0 to 36.8 degrees C. Maintenance of target temperature was successful, with 85% of readings within +/- 1 degrees C of target, and 75% of readings within +/- 0.5 degrees C of target. One patient developed a small hydrothorax, not attributed to device use. All patients survived to discharge from the ICU, with median CPC of 2 (range 1 to 4).

Conclusion:
Targeted temperature management of patients with traumatic brain injury using an esophageal heat transfer device was feasible and safe, providing a tight maintenance of goal temperature in this challenging patient population.