Poster Sessions

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049.
Training for Disaster: From Disaster Site to the Ward

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There has been no war within Japan since the end of World War II. Disaster medicine's history has been based upon a military-medicine model. Therefore, no disaster medicine program has been established. But Japan is prone to disaster and there is a need for disaster-relief training.

Simulated Scenario: More than 70 victims were identified following a major traffic accident, and the victims must be provided with adequate assessment and treatment. Fifth-year medical students served as victims and studied the signs and symptoms of the injuries assigned. Moreover, they have to make-up (moulaged) and play the a role appropriate to the severity of the trauma. (These fifth-year medical students were assigned either the roles of victim or emergency personnel. In assuming these roles, they were to exhibit the correct symptoms if acting as the patient, or diagnosis the nature of the injury.

A prehospital-care system transported the injured patients. A hospital-care team responded to the situation under the direction of the medical disaster supervisor. A post-exercise conference was conducted with representatives from each of the groups, both the prehospital and in-hospital care teams participated.

Results and Discussion: There was some delay in relaying information from the disaster site. Hospital personnel considered the speed of the response more important than the coordination between each section of the hospital care. Medical students could identify with the victims' feelings. All the participants agreed that the need of further periodic drills was important to the practice of disaster medicine.

069.
Use of Infrared Thermometry to Measure Lavage and Intravenous Fluid Temperature

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Background: At present, there is no sterile means for measuring the delivery temperature of warmed lavage and intravenous fluids.

Objective: To determine the accuracy of tympanic thermometers for measuring the temperature of warmed fluids in fluid bags and in tubing at the delivery site (e.g., adjacent to the intravenous [IV] catheter).

Research Design: In-vitro laboratory study.

Methods: One liter 0.9% NaCl bags were warmed in a microwave oven. A thermocouple electronic temperature probe (BAT-12, Physitemp Inc. Clifton, NJ) then was used to measure the reference temperature. The probe was inserted into each bag and bathed in the fluid. Temperature changes were recorded simultaneously over 20 minutes using the probe and a First Temp Tympanic Thermometer. A total of 225 simultaneous measurements were made over the range of 34° to 48° C. The warmed fluid then was allowed to run through microdrip IV tubing. Temperature of the effluent was measured in the tubing using the tympanic thermometer externally and the probe internally at the same point. Again, 225 simultaneous measurements were made over the range of 31° to 45° C. The two measures were compared using linear regression and Student's *t*-tests.

Results: The correlation between the two probes was r = 0.99 for both the fluid bags and the IV tubing. The mean difference between the probe and tympanic thermometer was small: 0.7° C and 1.2° C for the bags and tubing respectively, but were statistically different ($p < 0.05$).

Conclusion: Infrared thermometry is an accurate method for measuring the initial and delivery temperature of warmed fluids. Although tympanic thermometer measurements were statistically different from reference readings, this difference was small and not clinically significant. Tympanic thermometers can measure the temperature of both warmed fluid bags and lavage, and IV effluent adjacent to the catheter site, ensuring that hypothermic patients receive fluid at therapeutic temperatures.

070.
Optimal Temperatures for Intravenous and Lavage Fluid in Hypothermia

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Background: Present recommendations do not consider conductive heat loss from warmed fluid.

Objective: To determine ideal warming temperatures for lavage/IV fluid in hypothermic patients.

Research Design: In-vitro laboratory study.

Methods: One liter bags 0.9% NaCl were warmed to 60° C, and fluid run for one hour at 1,000, 800, 600, 400 ml/hour through microdrip tubing (Baxter, Deerfield, IL) into which temperature probes (BAT-12, Physitemp Inc. Clifton, NJ) were placed at 100, 180, 230, and 280 cm, approximating commercial tubing lengths. Fluid bags were also warmed to 39.3° and 75° C and run at 1,000 and 200 ml/hour respectively and temperatures recorded at the same distances for one hour. Sixty

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