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Risk Factors for Hypothermia in EMS-treated Burn Patients.

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Objective. Hypothermia has been associated with increased mortality in burn patients. We sought to characterize the body temperature of burn patients transported directly to a burn center by emergency medical services (EMS) personnel and identify the factors independently associated with hypothermia.

Methods. We utilized prospective data collected by a statewide trauma registry to carry out a nested case-control study of burn patients transported by EMS directly to an accredited burn center between 2000 and 2011. Temperature at hospital admission $\leq 36.5^{\circ}\text{C}$ was defined as hypothermia. We utilized registry data abstracted from prehospital care reports and hospital records in building a multivariable regression model to identify the factors associated with hypothermia.

Results. Forty-two percent of the sample was hypothermic. Burns of 20-39% total body surface area (TBSA) (OR 1.44; 1.17-1.79) and $\geq 40\%$ TBSA (OR 2.39; 1.57-3.64) were associated with hypothermia. Hypothermia was also associated with age > 60 (OR 1.50; 1.30-1.74), polytrauma (OR 1.58; 1.19-2.09), prehospital Glasgow Coma Scale < 8 (OR 2.01; 1.46-2.78), and extrication (OR 1.49; 1.30-1.71). Hypothermia was also more common in the winter months (OR 1.54; 1.33-1.79) and less prevalent in patients weighing over 90 kg (OR 0.63; 0.46-0.88).

Conclusions. A substantial proportion of burn patients demonstrate hypothermia at hospital arrival. Risk factors for hypothermia are readily identifiable by prehospital providers. Maintenance of normothermia should be stressed during prehospital care.