(120) Hydroxocobalamin in the Prehospital Treatment of Smoke Inhalation

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Introduction: It has been estimated that 35% of victims rescued from fires have hydrogen cyanide poisoning. Hydroxocobalamin is a specific, non-toxic antidote for cyanide poisoning. It has been administered by Helsinki Emergency Medical Services (EMS) to fire victims presenting with symptoms of acute cyanide poisoning (altered state of consciousness, low blood pressure) since 1999. Randomized, controlled trials are no longer possible due to legislation necessitating informed consent. A retrospective case-control study was conducted to estimate the benefit of hydroxocobalamin use in fire victims.
Methods: A sample of 17 patients rescued from residential fires was studied. In the treatment group (n = 9), patients received 5 g of hydroxocobalamin. Historical controls (n = 8) from the time before hydroxocobalamin was implemented in the prehospital setting were used. Data were collected from EMS and hospital records.
Results: The patients in the hydroxocobalamin group were more severely exposed to smoke (higher carboxyhaemoglobin level, $p = 0.082$). On arrival to the hospital, these patients had higher systolic blood pressure (mean ±standard deviation, 140 ±21 mmHg vs.118 ±39, $p = 0.128$) and more patients were in lower lactate group (lactate <4.0 mmol/l) than in the control group ($p = 0.059$). The hydroxocobalamin group also did not need vasopressors during the first eight hours ($p = 0.110$). All patients survived. Hydroxocobalamin had no serious adverse effects on the patients.
Conclusion: The results may indicate successful treatment of cyanide poisoning with hydroxocobalamin. This study was limited by its small sample size and its retrospective setting. The use of hydroxocobalamin could be considered in smoke inhalation patients with an altered state of consciousness, low blood pressure, or lactic acidosis.
Keywords: cyanide poisoning; Finland; fire victims; hydroxocobalamin; smoke inhalation patients
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(121) Infectious Disease Control with the Use of Impregnated Wash Gloves and Vomit and Urine Bags

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Infectious diseases pose a risk in disaster management. Patients and rescue staff are in danger of exposure through fluids, such as urine, vomit, and contaminated water. Research has indicated that there is a need for products that safeguard disaster victims and healthcare workers against the hazards of infectious diseases. Specifically, the focus on health awareness calls for ways to limit the spread of diseases associated with body fluids such as urine, vomit, and blood.

Vitmo has developed antibacterial, impregnated care gloves, and a vomit and urine bag, using an antibacterial super absorber that turns fluids into a gel within seconds. The polymer used consists of antibacterial agents that inhibit bacterial and fungus growth, including E.Coli, PS Auroginosa, and other urinary bacteria. The products allow easy handling and transport of contaminated materials at a disaster scene.

The use of impregnated wash gloves promotes safe handling of contaminated fluids according to the DIN EN ISO 20645. Studies show that effective labor increases to 96%, the hygiene factor to 85%, and the convenience factor to 98% with the use of such a urine and vomit bag. Cleaning time is reduced by 50% with the use of the wash glove, with less waste in wound care.
Keywords: body fluids; contamination; impregnated wash gloves; infectious diseases; vomit and urine bag
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(122) Prehospital Hypertonic Saline in Trauma: A Systematic Review

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Introduction: For the majority of the 20th century, restoration of lost intravascular fluid volume has been the objective of resuscitating a patient with post-traumatic hypotension. With the advent of prehospital Emergency Medical Services and the ever-present threat of global warfare, infusion of a smaller volume of an equally effective, or even superior replacement fluid, would be desirable. Preclinical resuscitation studies conducted with the infusion of hypertonic saline were encouraging. Clinical studies indicated that the use of hypertonic saline was safe, volume sparing, and increased the survival of trauma patients with head injury or blunt/penetrating trauma who were in hemorrhagic, hypovolemic shock.
Methods: A comprehensive search of the Cochrane Central Register of Controlled Trials, MEDLINE, and EMBASE was conducted. The primary outcome of mortality and the secondary outcomes of morbidity, adverse outcomes, and length of follow-up were assessed.
Results: Six clinical trials compared the use of hypertonic saline versus Ringer's Lactate in trauma victims. The pooled relative risk for death among trauma patients was 0.84 (95% confidence interval (CI) = 0.69–1.04) for hypertonic saline compared to Ringer's lactate. Most of the trials were small and varied in the type of participants and the length of follow-up. There was little standardization in the fluid administration regimes. Eight trials involving 1,283 randomized trauma patients, compared the outcomes following the administration of dextran in hypertonic crystalloid with isotonic crystalloid. The pooled relative risk for death was 0.88 (95% CI = 0.74–1.05) for dextran and hypertonic crystalloid. The trials were heterogeneous and with many design shortcomings. There was no significant improvement in survival.
Conclusions: Until well designed, multi-center, prehospital, randomized, controlled trials are conducted; hypertonic/hypertonic-hyperoncotic solutions should be used with