(120) Hydroxocobalamin in the Prehospital Treatment of Smoke Inhalation

J. Lötjönen;[1] M.J. Kuisma;[2] J.J. Boyd;[2] L.V. Jalkanen;[3] K. Hoppu[3]
1. Swindon, United Kingdom
2. Helsinki Emergency Medical Services, Helsinki, Finland
3. Helsinki University Central Hospital, Helsinki, Finland

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
Prehosp Disast Med 2007;22(2):s74

(121) Infectious Disease Control with the Use of Impregnated Wash Gloves and Vomit and Urine Bags

G.B. Bartel-Lingg
Vitmo, Esslingen, Germany

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
Prehosp Disast Med 2007;22(2):s74

(122) Prehospital Hypertonic Saline in Trauma: A Systematic Review

A. Sen;[1] J. Prasad[2]
1. Hope Hospital, Manchester, United Kingdom
2. Countess of Chester Hospital, Chester, United Kingdom

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

caution for resuscitation of patients in traumatic hypovolemic shock with or without head injury.
Keywords: hypertonic saline; isotonic; prehospital; Ringer's Lactate; traumatic shock
Prehosp Disast Med 2007;22(2):s74–s75

(123) Case Report of Survival in a Patient with 90% of their Total Body Surface Area Burned

A.P. Ferro;[1] O.A. Gvindzhyliya;[2] L.K. Krebs[1]
1. Santa Maria University Hospital, Lisbon, Portugal
2. Santarm District Hospital, Santarm, Portugal

Background: During the last 10 years, there has been a decrease in the mortality rate of burned patients. Despite this improvement, mortality is still high in the presence of inhalational injury, or patients with large total burn size and >60 years of age.
Case Report: A healthy, 17-year-old man was burned by ignition of his clothing in an enclosed space. He was taken to the local hospital where his burn area was evaluated as 90% of his total body surface area (mainly 3rd degree burns with 7–10% of 2nd degree burns). After initial treatment and stabilization, the patient was transferred to the Burn Unit of Santa Maria University Hospital. He was mechanically ventilated for 43 days, and was treated successfully for pneumopathy, various infections, and acute cholecystitis. The patient underwent 11 surgeries, and early skin graft was done successfully for all the burned area. After 80 days of treatment in the Burn Unit, he was discharged to the plastic surgery ward of his local hospital, where he continued specific physical therapy and antidepressant treatment. At the time of discharge, he was able to communicate, feed himself, and ambulate with help.
Conclusions: There are few multi-center, prospective, clinical burn trials, leading to divergent methods of practice. Survival of patients with 90% of total body surface area burned in their first hours is rare. Proper treatment in this period is crucial. To the authors' knowledge, this is a unique case of survival of such a patient in Portugal.
Keywords: burn injury; burn patient; survival of burn victims; total body surface area
Prehosp Disast Med 2007;22(2):s75

(124) Emergency Transport for Acute Chest Pain Patients: Does it Affect Hospital Treatment?

M. Haque;[1] M. Haque;[2] Y. Ahmady;[2] G. Ali;[2] K. Islam;[2] H. Kabiri[2]
1. Georgetown University Hospital, Washington, DC USA
2. USA

Introduction: Emergency transport of patients to the hospital for acute chest pain is critical for timely access to medical treatment. Transport management decisions may affect transitions between first responders and emergency department (ED) personnel. This study investigates whether patient characteristics factor into decision algorithms regarding emergency transport and whether these characteristics affect in-hospital treatment times.
Methods: Emergency medical transport decisions such as circumstances leading to use of lights and sirens (LAS) were analyzed to determine whether any patient characteristics were related to the decision to use LAS and whether LAS affected the time interval between arrival to the hospital and patient treatment.
Results: Patients transported by ambulance were older and had a higher prevalence of previous cardiac event. The median interval between symptom onset and ED arrival was 121 minutes (range 5 to 590 minutes). Transport by emergency medical services (adjusted hazard ratio 0.28 [95% confidence interval 0.19 to 0.41]), increasing age (hazard ratio 0.99 [95% CI 0.98 to 0.99]), and symptoms considered urgent were the factors most strongly associated with a shorter out-of-hospital interval. LAS were used 87% to the scene and 26% to the hospital. Hospital staff responded more quickly to ambulances coming in with LAS; ER physicians evaluated patients in 9.8 minutes versus 17.2 minutes without LAS.
Conclusions: Patients who receive emergency transport with LAS for acute chest pain to the ED will be evaluated sooner and the interval between symptom onset and time to ED arrival are decreased. Potential rationale for this result is discussed.
Keywords: acute chest pain; cardiac event; emergency department; emergency transport; lights and sirens
Prehosp Disast Med 2007;22(2):s75

(125) Amatoxin Intoxication After Wild Mushroom Ingestion

D.S.E. Varin; S.A.M. Ennecker-Jans; P.L.A. van Daele; M.I. Blonk; J.A.M. van Laar; T.M. Mulligan
Department of Emergency Medicine, Erasmus Medical Center, Rotterdam, The Netherlands

The case of three patients with gastrointestinal symptoms and hepatitis after ingestion of Amanita phalloides (Deathcap or Death angel) mushrooms will be presented. Patient A, a 54-year-old Chinese man, and Patients B and C, a 51 and 55-year-old Chinese woman respectively, presented with stomach pain, nausea, vomiting, and diarrhea after eating home-made soup with wild mushrooms. Patient A looked ill, with RR 132/78, pulse 55/minute, a temperature of 37°C, and active peristaltics. Liver enzymes were elevated slightly. Patients B and C presented similarly. The suspicion of amatoxin intoxication was confirmed by measuring urinary a-amanitin concentration. The patients received fluid infusion, activated charcoal, high dose IV benzylpenicilline, N-acetylcysteine (NAC), and silibinin, an experimental antidote. After 3–4 days, their liver enzymes reached maximum elevation and then decreased. All patients recovered fully and were discharged after eight days.

Amanita phalloides is a highly toxic mushroom. One specimen can contain enough poison (amatoxin) to kill a healthy adult. Amatoxin inhibits RNA polymerase II, leading to cell death, with mortality rates of >90%. The intoxication is divided into four phases: (1) the latent phase; (2) the gastrointestinal phase; (3) the second latent phase; and (4) the hepatic phase, leading to hepatic-renal failure and death. The classic treatment is supportive. However, an experimental drug silibinin has shown to be effective against amatoxin by decreasing drug conversion, but it is