Hg], and (4) blood cultures obtained. Medical records were reviewed for final source of infection, presence of bacteremia, relevant organism, and antibiotic sensitivity. Analysis was performed using Fisher's exact test and 95% confidence intervals (95% CIs).

Results: There were 243 patients included in the study. The most common sources of infection are identified in the table. Bacteremia was present in 74/243 (30%; 95% CI = 25%-36%) patients, with the most common pathogens being (a) *Staphylococcus* 26/74 (35%), (b) *Enterococcus* 16/74 (22%), and (c) *Streptococcus* species 11/74 (15%). Methicillin-resistant *Staphylococcus aureus* (MRSA) was present in 13/74 (18%), vancomycin-resistant *Enterococcus* (VRE) was present in 3/74 (4%), and quinolone resistance was present in 17/74 (23%) of patients with bacteremia. Mortality rates were similar among bacteremic (19/54, 35%) versus nonbacteremic (42/126, 33%) patients, p = 0.9.

Conclusions: Pneumonia was the most common source of infection and carried the highest mortality. Patients with bacteremia had no increased risk of death; there was a notable prevalence of penicillin and levofloxacin resistance, which may influence the selection of empiric antibiotics in the ED.

Source	Prevalence	Mortality
Pneumonia	93/243 (38%)	29/93 (31%)
Urinary tract	50/243 (21%)	12/50 (24%)
Cellulitis	22/243 (9%)	3/22 (14%)
Unknown source	40/243 (16%)	6/40 (15%)

97 Does Physical Restraint Impact Metabolic Oxygen Consumption during Exertion?

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Objectives: Combative patients often require physical restraint by emergency department (ED) and out-of-hospital personnel. We sought to determine metabolic demands and peak oxygen consumption (VO_2peak) during maximal exertion in the prone restraint position compared with standard maximal treadmill testing. We hypothesized that restraint would reduce oxygen consumption because of limitations in physical movement.

Methods: 30 human subject volunteers completed a crossover, controlled experiment. Subjects performed two randomized trials, a standard maximal treadmill test (control) and maximal exertion while in a prone maximal restraint or hobble position (PMRP) at a university exercise physiology laboratory. To prevent fatigue bias, the trials were separated by at least 1 day. During PRMP, subjects were placed prone with their wrists handcuffed behind the back, the ankles secured to each other, and the wrists and ankles secured to each other by standard hobble strap. During the 60-second test, subjects were asked and encouraged to struggle and maximally exert themselves during which time VO_2, respiratory rate (RR), and heart rate (HR) were measured. For the control, subjects performed a maximal exercise treadmill test using standard protocol. Data were compared with paired t-testing and 95% confidence intervals (95% CIs).

Results: VO_2peak in the PRMP position (19.8 $\pm$ 5.4 mL/kg/min; CI 18.2-22.2) was only 39% of VO_2peak from the control (50.2 $\pm$ 7.8 mL/kg/min; CI 47.1-53.2) ($p < 0.01$). Also, peak HR was significantly lower in PMRP (160 $\pm$ 19 beats/min; CI 156-176) compared with treadmill test (190 $\pm$ 12 beats/min; CI 183-192) ($p < 0.01$); whereas there was no significant difference in RR (56 $\pm$ 8 breaths/min [CI 52-59] for the PMRP trial vs 60 $\pm$ 14 breaths/min [CI 54-65] for the treadmill trial) ($p = 0.15$).

Conclusions: In a study of human volunteer subjects, metabolic oxygen consumption in the restraint position was significantly lower when compared with standard maximal treadmill testing.

98 A Randomized, Controlled Trial Comparing Different Treatment Regimens Following Oleoresin Capsaicin (Pepper Spray) Exposure

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Objective: Oleoresin capsicum (OC), an inflammatory agent, is a derivative of hot cayenne peppers used as a defensive and incapacitating agent. Exposure to OC results in irritation and inflammation of the mucous membranes. The purpose of this study was to compare various topical agents for decreasing pain related to OC exposure.

Methods: We performed a single-blind, randomized human experiment evaluating the effectiveness of 5 different regimens for the treatment of topical facial OC exposure in volunteer adult law-enforcement trainees. Forty-nine adults consented for the study and were exposed to OC during a routine training exercise. Following exposure to OC, subjects underwent a 2-minute training exercise and then were allowed to self-decontaminate with tap water. After decontamination, subjects rated their pain using a 10-cm visual analog scale (VAS). The subjects were then randomized into one of 5 different treatment cloths soaked with one of 4 different substances (Maalox, 2% lidocaine gel, baby shampoo, and milk) or 1 control group (water). Subjects were observed for 60 minutes and allowed to use as many towels as desired. Subjects' pain was documented every 10 minutes using the VAS. Subjects were blinded to previous VAS recordings and treatment regimens. A 1.3-cm improvement was considered clinically significant.

Results: 45 men and 4 women with an average age of 24 were enrolled in the study. Two-factor analysis of variance (ANOVA) (treatment, time) with repeated measures on one factor (time) was performed. There was a significant difference in pain with respect to time ($p < 0.001$), but no significant interaction between time and treatment ($p > 0.05$). There was no significant difference in pain between treatment groups ($p > 0.05$).

Conclusions: In this study there was no significant difference in pain between different treatment groups for pain relief secondary to facial OC exposure. Time after exposure appeared to be the best predictor for decrease in pain.