

## INTERNATIONAL ABSTRACTS

### **TOXIC EPIDERMAL NECROLYSIS (TEN): THE CHELSEA AND WESTMINSTER HOSPITAL WOUND MANAGEMENT ALGORITHM**

This paper from the UK aims to propose a generic toxic epidermal necrolysis syndrome (TEN) wound management algorithm according to the severity of skin lesions, using a simple wound grading system. TEN is a potentially catastrophic exfoliative mucocutaneous disorder first described by Lyell in 1956. TEN represents the most extensive form of Steven-Johnson syndrome and is defined varying around the globe. However, the UK consensus opinion describes the process as involving >30% of the total body surface area. It can rapidly become more extensive and threatens life. The estimated annual incidence is approximately 1–2 cases per million population. The risk of mortality increases with surface area involved and meta-analysis of the literature shows this risk to be between 16% and 55%. Over a six month period the Chelsea and Westminster Hospital Burns Service treated five consecutive patients with more than 80% total body surface area involvement or a more than 80% mortality risk, using the severity-of-illness score for toxic epidermal necrolysis (SCORTEN). All patients were treated according to the Chelsea and Westminster Hospital wound management algorithm with excellent outcome and no mortalities.

Abela C, Hartmann CEA, De Leo A, de Sica Chapman A et al.  
Journal of Plastic, Reconstructive & Aesthetic Surgery, 67: 1026-32, 2014

### **PREDICTORS OF SERIOUS BACTERIAL INFECTIONS IN PEDIATRIC BURN PATIENTS WITH FEVER**

To determine predictors of serious bacterial infections in pediatric burn patients with fever (core temp  $\geq 38.5^{\circ}\text{C}$ ), the authors of this paper from the USA conducted a retrospective review of medical records of pediatric (0–18 years) patients admitted to the Arizona Burn Center between 2008 and 2011 with greater than 5% TBSA and inpatient hospitalization for  $\geq 72$  hours. The study group comprised patients with a febrile episode during their inpatient stay. Serious bacterial infection (the primary outcome variable) was defined as: bacteremia, urinary tract infection, meningitis (blood, urine, or cerebrospinal fluid culture positive for a pathogen respectively), pneumonia, line, and wound infection. A generalized estimating equation analysis was done to predict the presence or absence of serious bacterial infection. Of 1082 pediatric burn patients hospitalized during the study period, 353 met the study eligibility criteria. A total of 108 patients (30.6%) had at least one fever episode (fever group). No difference in demographic characteristics was noted between the fever and no-fever groups; significant differences were observed for: third-degree TBSA, second-degree TBSA, total operating room visits,

length of stay, Injury Severity Score, and death. A total of 47.2% of the patients had one or more episodes of fever with serious bacterial infection. In a generalized estimating equation predictive model, presence of a central line, second-, and third-degree TBSA were predictive of serious bacterial infection in burn patients with fever. In this study, individual clinical variables such as tachypnea and tachycardia were not predictive of serious bacterial infections, but the presence of a central line, and larger TBSA were significant predictors of serious bacterial infections. Younger age ( $P=.08$ ) and ventilator support ( $P=.057$ ) also approached significance as predictors of serious bacterial infections.

Vyles D, Madhumita S, Rosenberg DI, Foster KN et al.  
Journal of Burn Care & Research, 35: 291-5, 2014

### **PATIENT EXPERIENCES LIVING WITH SPLIT THICKNESS SKIN GRAFTS**

The standard of care for deep burns is autologous split thickness skin grafting. Although adequate to resurface a deep wound, the resulting skin is chronically abnormal. The purpose of this study from Canada was to describe the experience of patients with split thickness skin grafts to help guide future investigations related to skin regeneration. In this study, an interpretive description qualitative methodology was employed. Subjects participated in a two-part single patient interview that was recorded and transcribed. A nurse with experience in clinical burn care coded and interpreted the data. Participants were recruited through presentation to a university based outpatient burn clinic for follow up from autologous split thickness skin grafting. Eight male patients and four female patients 20–62 years old ranging 2–29 months post-skin grafting were enrolled in the study. The most significant concerns voiced by patients were identified and organized into five themes: (1) a new normal, (2) split thickness skin graft symptoms, (3) appearance of new skin, (4) coping, and (5) participation in future clinical trials. Participants reported that the abnormalities related to their split thickness skin grafts were significant enough that they would be willing to participate in a future clinical trial investigating new cell-based therapies.

L.N. Burnett LN, Carr E, Tapp D, Raffin Bouchal S, Horch JD et al.

Burns, 40: 1097-105, 2014

### **CYANOACRYLATE GLUE BURN IN A CHILD - LESSONS TO BE LEARNED**

Cyanoacrylate is the generic name for cyanoacrylate based 'fast-acting' adhesives such as methyl-2-cyanoacrylate and ethyl-2-cyano-

acrylate (commonly sold under trade names like Super Glue and Crazy Glue). Other forms have been developed as medical grade glues to be non-toxic and less irritating to skin tissue. Cyanoacrylate has a multitude of uses, ranging from simple domestic applications, to those for industrial purposes. It is an acrylic resin which rapidly polymerises in the presence of water (specifically hydroxide ions), forming long, strong chains, joining the bonded surfaces together. Cyanoacrylate sets quickly, often in less than a minute and a normal bond reaches full strength in two hours and is waterproof. This case report from the UK outlines an interesting case of a full thickness burn resulting from skin in contact with cyanoacrylate glue, including highlighting several areas where the management was not appropriate. This was likely due to the novel presentation of this patient, and lack of education of staff. Although there have been cases of burns resulting from this type of glue documented in the literature, there are none of this exact nature and depth.

Clarke TFE

Journal of Plastic, Reconstructive & Aesthetic Surgery, 64: 170-3, 2011

#### **A 10-YEAR EXPERIENCE WITH MAJOR BURNS FROM A NON-BURN INTENSIVE CARE UNIT**

The aim of this study from Mexico was to review clinical data and outcomes of patients with burns in a non-burn intensive care unit (ICU). The authors did a retrospective analysis of our single-centre database of burn patients admitted to the ICU in the Hospital Civil Fray Antonio Alcalde (University Hospital). The sample was divided for analysis into two groups according to the outcome 'death' or 'discharge' from ICU. Overall mortality was 58.2%, without a decreasing trend in mortality rates through the years. We identified the presence of third-degree burns (odds ratio (OR) 1.5,  $p = 0.003$ ), and >49% total burned surface area (TBSA; OR 3.3,  $p \leq 0.001$ ) was associated with mortality. Mean age was higher in deceased patients (38.2 years vs. 31.3 years,  $p = 0.003$ ) as was the TBSA (62.8% vs. 36.4%,  $p \leq 0.001$ ). At multivariate analysis, inhalation injury was not associated with increased mortality, but it was with more mechanical ventilation days. Early surgical debridement/cleansing was performed in most patients; however, the mean of the procedures was 1.7 per patient in both groups. The authors identified significant factors associated with mortality. These variables and prognosis from non-burn ICUs differ broadly compared with burn intensive care units (BICUs); thus, more structured, multidisciplinary and specialised treatment strategies are still needed.

Ibarra Estrada MA, Chávez Peña Q, García Guardado DI et al.  
Burns, 40: 1225-31, 2014

#### **SUSTAINED HIGH INCIDENCE OF INJURIES FROM BURNS IN A DENSELY POPULATED URBAN SLUM IN KENYA: AN EMERGING PUBLIC HEALTH PRIORITY**

Ninety-five percent of burn deaths occur in low- and middle-income countries (LMICs); however, longitudinal household-level studies have not been done in urban slum settings, where overcrowding and unsafe cook stoves may increase likelihood of injury. Using a prospective, population-based disease surveillance system in the urban slum of Kibera in Kenya, the authors examined the inci-

dence of household-level burns of all severities from 2006–2011. Of approximately 28,500 enrolled individuals (6000 households), 3072 burns were identified. The overall incidence was 27.9/1000 person-years-of-observation. Children <5 years old sustained burns at 3.8-fold greater rate compared to ( $p < 0.001$ ) those  $\geq 5$  years old. Females  $\geq 5$  years old sustained burns at a rate that was 1.35-fold ( $p < 0.001$ ) greater than males within the same age distribution. Hospitalizations were uncommon (0.65% of all burns). The incidence of burns, 10-fold greater than in most published reports from Africa and Asia, suggests that such injuries may contribute more significantly than previously thought to morbidity in LMICs, and may be increased by urbanization. As migration from rural areas into urban slums rapidly increases in many African countries, characterizing and addressing the rising burden of burns is likely to become a public health priority.

Joshua M. Wong JM, Nyachio DO, Benzekri NA, Cosmas L et al.

Burns, 40: 1194-200, 2014

#### **PRE-HOSPITAL EMERGENCY BURN MANAGEMENT IN SHANGHAI: ANALYSIS OF 1868 BURN PATIENTS.**

There are few studies reporting the level of pre-hospital emergency management of burn patients and related influencing factors in China. This study is a summary of an investigation on emergency education and people's awareness about pre-hospital emergency management of burn patients in Shanghai, China, and analyzes key factors influencing pre-hospital emergency management of burn patients. The survey was conducted by questionnaire in burn patients who sought initial clinical visits at the Burn Center of Changhai Hospital (Shanghai, China) between November 2009 and December 2010, including demographic data, burn conditions, pre-hospital emergency management and education about emergency burn management. Data were statistically treated by SPSS software. Altogether 1868 effective questionnaire forms were collected; 33.9% of these burn patients received cooling treatment before admission and 32.2% of them used 'folk remedies' or antibiotics to treat the wound surface. Only 12.2% of these burn patients had received education about the knowledge of emergency management, mainly through public media (38.2%), relatives and friends (24.6%), Internet (15.8%), workplace (11.4%) and schools (10.1%). The result of logistic regression analysis showed that emergency education, especially via Internet and workplace, played an important role in pre-hospital emergency management, and that different channels of emergency education affected different age groups of people: network and unit education mainly affected young adults, while relatives and friend mainly affected elderly people. In addition, educational level was an important factor favourably affecting 'cooling therapy'. The level of emergency burn management and related education is relatively low in China at present, and it is therefore necessary to intensify education about pre-hospital emergency management to raise the level of emergency burn management. At the same time, more attention should be paid to age- and population-specific education. Finally, universal emergency education should be included in the national basic education as a long-term strategy.

Ji SZ, Luo PF, Kong ZD, Zheng XF, Huang GF et al.  
Burns, 1174-80, 2012