INTERNATIONAL ABSTRACTS

INTRA-ABDOMINAL HYPERTENSION IN SEVERE BURNS: PREVALENCE, INCIDENCE AND MORTALITY IN A SUB-SAHARAN AFRICAN HOSPITAL

The aim of this article was to determine the prevalence, incidence, organ dysfunction and mortality of intra-abdominal hypertension among severe burns patients. A prospective cohort study was conducted over a 6-month period in the Burns Unit of Mulago National Referral Hospital in Uganda. Sixty-four patients with burns ≥25% and 20% in adults and children respectively were recruited and followed up for 7 days or until death occurred. The outcome variables were intra-abdominal pressure, organ dysfunction and seven-day mortality. The overall prevalence of IAH was 57.8%, while the prevalence in children and adults was 54.5% and 61.3% respectively. The one-week mortality of patients with IAH was 82.6% with the risk of dying being 3.34 (p=0.0035) and seven-day survival being less than 50%. The authors concluded that one in two patients with severe burns exceeding 20% or 25% in children or adults respectively developed IAH. Adults had a higher prevalence and incidence of IAH. Mortality associated with IAH exceeded 80%.

Mbiine R. et al.
International Journal of Burns & Trauma, 7(6): 80–87, 2017

WINNER IN THE RING: ADVANTAGES OF THE WATUSI COLLAR IN MANAGEMENT OF POST-BURN NECK SCAR CONTRACTURES

In this paper, the authors present a historical review of neck splinting for burn scar contractures and describe the use of the custom-made Watusi collar in patients with neck burns. Methods of splint manufacture are described, based on current institutional therapist practice. A series of patients with neck burns managed by splinting with the Watusi collar are discussed, as well as patients treated in outreach efforts to Malawi. Patients treated with the Watusi collar at a Burn Centre as well as those managed by local practitioners in Malawi found the splint to be more comfortable than alternatives and therefore were compliant with their use. Care providers in Malawi were affordably and easily able to adapt the Watusi collar to available materials. The authors conclude that the Watusi collar is a valuable option for the management of neck scars and contractures after burn injury. These splints are affordable, customizable and enable compliance through increased patient comfort. Initial international outreach efforts demonstrate potential benefits of these collars in resource-limited regions.

Nosanov L.B. et al.

RELATIONSHIP BETWEEN MULTIDISCIPLINARY CRITICAL CARE AND BURN PATIENTS SURVIVAL: A PROPENSITY-MATCHED NATIONAL COHORT ANALYSIS

The authors conducted a retrospective multi-centre cohort analysis of burn patients admitted between January 2005 and January 2011 to 13 critical care services in England and Wales. The aims of the study were to investigate if admission to specialized burn critical care units leads to better clinical outcomes, and secondly, to elucidate if multidisciplinary critical care contributes to this superior outcome. The units were contacted by telephone to establish frequency and constitution of daily ward rounds. Critical care units were categorized into 3 settings: specialized burns critical care units, generalized critical care units and ‘visiting’ critical care units. Multivariate logistic regression analysis and propensity dose–response analysis were used to calculate risk adjusted mortality. The analysis showed that admission to a specialized burn critical care service is independently associated with significant survival benefit compared to admission to generalized critical care units and ‘visiting’ critical care services. Further analysis using propensity dose–response analysis demonstrated that risk-adjusted in-hospital mortality rate decreased as the dose of multidisciplinary care increased. The authors conclude that admission to a specialized burn critical care unit has significant survival benefit, and that this, at least in part, is due to care being provided by a fully integrated multidisciplinary team.

Thet Su Win et al.
Burns, 44(1): 57–64, 2018

A NATIONAL PERSPECTIVE ON ECMO UTILIZATION USE IN PATIENTS WITH BURN INJURY

The authors of this article investigate utilization use and outcomes for burned patients undergoing ECMO (extracorporeal membranous oxygenation). The National Burn Repository (version 8.0) was searched for patients with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9) procedure codes for ECMO. Demographics, comorbidities, mechanism, injury details, and clinical outcomes were recorded. ECMO patients were matched one-to-one to those not requiring ECMO based on age, gender, TBSA and inhalation injury. Thirty ECMO-treated burn patients were identified. The study found that the ECMO cohort had significantly higher rates of cardiovascular comorbidities, concomitant major thoracic trauma, pneumonia, acute renal failure and sepsis than non-ECMO patients. Ventilator usage, intensive care unit
(ICU) length of stay and mortality were also significantly higher in those treated by ECMO ($P < .05$). Although burn patients placed on ECMO have significantly higher rates of morbidity and mortality than those not requiring ECMO, the mortality rate is equivalent to patients reported by the Extracorporeal Life Support Organization. The authors conclude that ECMO is a viable option for supporting critically injured burn patients.

Nosanov L.B. et al.
J Burn Care Res, 39(1): 10–14, 2018

**ANALYSIS OF OPERATING ROOM EFFICIENCY IN A BURN CENTRE**

The objective of the authors of this article was to review their burn operating room (OR) procedures to determine if and where inefficiencies exist. Data for all operations performed in a dedicated burn OR from January 1, 2015, to July 31, 2016 were reviewed in the electronic medical records of their public, teaching hospital. The total time spent was allocated as follows: induction (patient in room to end of induction), preparation (end of induction to procedure start), procedure (procedure start to procedure end), exit (procedure end to patient out of room), and turnover (patient out of room to next patient in room). A total of 1033 cases were analysed. The authors found that procedure, turnover and preparation were the three largest time components of an operation in decreasing order (39, 29 and 18%). They concluded that the time spent doing procedures comprises about 40% of the total operational time in a burn OR.

Madni T.D. et al.
J Burn Care Res, 39(1): 89–93, 2018

**EPIDEMIOLOGY OF HOSPITALIZED BURN PATIENTS IN CHINA: A SYSTEMATIC REVIEW**

The authors conducted a systematic review of available literature in order to identify specific epidemiological characteristics of burns in China. Pubmed, Embase, China Biology Medicine disc Database (CBM) and Chinese Journal Full-text Database (CJFD) were searched for retrospective studies published in English or Chinese between 1978 and 2016 that focus on epidemiology of burns in all age groups in China. Data on demographic characteristics, seasonal variation, agents causing burns, severity, mortality and main causes of death were extracted for analysis. Thirty-one retrospective articles were identified. The study revealed that burns are particularly prevalent in summer and males are more vulnerable to burns in most regions of China. The age distribution of burn patients showed peaks at the age groups of 0–5 and 20–30 yr. Thermal burns, especially scalds, are the most common type of burns. Minor burn patients with 10% total body surface area (TBSA) burn or less make up the majority of hospital admissions. Sepsis, multiple organ dysfunction syndrome (MODS) and inhalation injuries are the main causes of death. The authors conclude that future research should focus on the early diagnosis and treatment of sepsis, MODS and inhalation injury so as to decrease the mortality of burns. Moreover, education on the prevention and relevant pre-hospital emergency care of burns should be improved.

Cheng W. et al.
Burns Open, 2(1): 8–16, 2018

**SAFE INJURY, SAFE INkichin:**

In this article from Japan, the authors report a case of severe hand burn with osseous blood flow deficiency that was successfully treated by an immediate operation with an abdominal bipedicled flap. The patient was a 28-year-old woman whose fingers were accidentally soaked in heated cooking oil (160°C-170°C) for approximately 1 minute. The result was fourth-degree (extending to the tendon) digital burns of the distal end of the proximal interphalangeal joint with blood flow deficiency to the skin, tendon, and bone. Immediate reconstructive surgery using an abdominal bipedicled flap was performed. Two weeks later, after the flap was separated, all fingers showed complete range of motion, restoration of the metacarpophalangeal joint, and a high range ($0°$-$75°$) of proximal interphalangeal joint mobility with an acceptable digital length. The authors conclude that their experience shows that immediate surgery is highly preferable for deep burns of the hand to avoid delayed intractable complications and to achieve better and faster results.

Hihara M. et al.
ePlasty, 18: e11, 2018

**THE SYSTEMIC IMMUNE RESPONSE TO PEDIATRIC THERMAL INJURY**

The purpose of this mini review was to provide a better understanding of the current literature regarding the systemic immune response to pediatric burn injury and to explore potential targets of immune directed therapy. The authors conducted a Pubmed literature search to review areas of the immune system that are impaired after thermal injury and identify key immune players that are potential targets for therapeutic intervention. The study showed that there are changes in cytokine profiles and immune cell phenotypes following thermal injury. Treatment with immunomodulatory stimulants, including IL-7 and GM-CSF, lead to improved outcomes in critically ill patients and may also be useful tools to improve immune function in pediatric burn patients. The authors conclude that the innate and adaptive branches of the systemic immune system are impaired following thermal injury in adult and pediatric patients. Immunomodulatory therapies currently being used in areas outside of thermal injury may be useful tools to help improve outcomes following pediatric thermal injury.

Devine R.A. et al.
J Burn Trauma, 8(1): 6-16, 2018

**FUNCTIONAL RECONSTRUCTION OF SEVERELY BURNED HAND WITH OSSEOUS BLOOD FLOW DEFICIENCY WITH IMMEDIATE SURGERY USING AN ABDOMINAL BIPEDICLED FLAP: A CASE REPORT**

In this article from Japan, the authors report a case of severe hand burn with osseous blood flow deficiency that was successfully treated by an immediate operation with an abdominal bipedicled flap. The patient was a 28-year-old woman whose fingers were accidentally soaked in heated cooking oil (160°C-170°C) for approximately 1 minute. The result was fourth-degree (extending to the tendon) digital burns of the distal end of the proximal interphalangeal joint with blood flow deficiency to the skin, tendon, and bone. Immediate reconstructive surgery using an abdominal bipedicled flap was performed. Two weeks later, after the flap was separated, all fingers showed complete range of motion, restoration of the metacarpophalangeal joint, and a high range ($0°$-$75°$) of proximal interphalangeal joint mobility with an acceptable digital length. The authors conclude that their experience shows that immediate surgery is highly preferable for deep burns of the hand to avoid delayed intractable complications and to achieve better and faster results.

Hihara M. et al.
ePlasty, 18: e11, 2018